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Valuation of Metso and future financial investment recommendations

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Chapter 1. Objectives and methodology

In this Master Thesis, the aim of it is to apply the theoretical background learned during the master and obtain the financial valuation of a Finnish company, named Metso. It is one of the biggest companies in Finland and its principal lines of business are the mining and aggregates industries.

Before making the financial valuation, it is needed to analyze the macro and microenvironment and the whole corporation from strategic to financial information with the objective of having a global idea about the company and try to understand what the key points are to be profitable in industries.

To make the company's valuation, it will be used three valuation appraisal methods, such as Discounted Cash Flow Method; multiples Methods as sales multiples and equity multiples; balance sheet approaches and finally, the Dividend Valuation Method. However, the discounted free cash flow method will be the most relevant, thereby influencing the decision-making about if the company is overvalued or undervalued respecting the market. The future cash flows will be estimated using the past ones and the residual value of the company, which are adjusted for time value using a calculated updating rate from different databases.

Therefore, the final objective is to obtain an equity value that is the closest possible to the intrinsic value and in the end conclude whether Metso is trading above, below or at the fair market value. Nonetheless, it is important to bear in mind that this valuation will be developed under specific assumptions that are going to be taken according to the publicly available information, the economy, market and industry conditions.

After financial valuations, two different investments are proposed. According to Ernst & Young, there was a significant increase in deal value across the mining and metals sector in 2017, marking the highest value of completed deals since 2013 (Enrst & Young, 2018; Bloomberg Data Base).

Thusly, the first investment which is proposed, is an acquisition of one mining explosive's company that will be valuated through DFC method to achieve the price by way of which Metso would buy the proposed company. Afterward, the second proposed investment is creating a consulting department with the purpose of providing a comprehensive and integral service to Oil and Gas customers.

With these two investments, it is sought to create value for the company and other alternatives to grow through innovations and new technologies development.

Additionally, the company is looking for gain and be the world leader in its marks.

Chapter 2. Sectors

2.1 Mineral and Flow Control worldwide

Starting with the principal Metso's business line, the mining industry[1] is involved with the extraction of precious minerals and other geological materials. The extracted materials are transformed into a mineralized form that serves an economic benefit to the prospector or miner, according to Corporate Finance Institute definition.

Mining industry is cyclical, as a result of the thanks to the decrease between investment decisions and new mineral's supply. Demand tends[2] to grow in a relatively stable fashion on the back of global economic growth. Reciprocally, supply is added in extent when a new development is completed, according to PwC report called "Mine 2018. Tempting times" (PwC, 2018).

For next years, it is expecting the improved performance to continue into 2018 and have, for the first time, including an outlook on results for 2018.[3] Many of the large globally diversified mining companies have pledged to further reduce debt, which is a theme witnessed across much of the industry, in line with PwC report mentioned in the previous paragraph (PwC, 2018). The mining and metals sectors are returning to growth. The need to improve shareholder returns will drive bold strategies to accelerate productivity, improve margins and better allocate capital to achieve long-term growth (Ernst & Young, s.f.).

Secondly, Gas consumption in Europe in the fourth quarter of 2018 decreased by 3% a year-on-year comparison, after showing a decrease of 8% in the second quarter of 2018 and that of 5% in the third quarter of 2018, compared to the same quarter of the previous

[1] Typical activities in the mining industry include metals production, metals investing and metals trading.
[2] Miners need to strike a balance between near-term demands and their long-term vision to deliver value.
[3] These projections are based on historic performance, in conjunction with estimates of future key variables such as price, production and input costs.

year. Although gas-fired electricity generation increased in the fourth quarter of 2018 in year-on-year comparison (European Commision, 2018).

Lastly, The Flow Control segment supplies process industry flow control solutions and services. Customers operate in oil and gas, pulp and paper, and other process industries. As occurs in the mineral segment, market activity in Flow Control is expected to continue to grow in both equipment and services business (Metso, 2018).

2.2 Five forces of Porter

2.2.1 Threat of New Entry

According to Michael E. Porter, "new entrants to an industry bring new capacity, which means the desire to gain market share and often substantial resources" (Porter, 1998). This threat is composed of the barriers, the knowledge needed, the time and cost needed, the technology protection and the economy of scale.

Entering the markets where Metso operates has many difficulties. Laws[4] do not restrict competitor entries as such, but it is not easy to enter the markets where operate in. they can lead to a new competitor's entry (Porter, 1998). Metso needs to have large partnerships. However, the company usually protects their inventions by patents. The economy of scale is not large in B2B[5] business because companies generally order a specific number of products, to other companies[6].

2.2.2 Supplier power

Suppliers can exert bargaining power over participants in an industry by threatening to raise prices or reduce the quality of purchased goods and services[7] (Porter, 1998). The clear majority of Metso production is outsourced, according to the interview that the company the author had. Indeed, in industries like valves, the company produce themselves which significantly reduces the number of suppliers with which it must deals

[4] Laws can lead to a new competitor's entry.
[5] Business to Business.
[6] Metso is a established firm, which has a brand identification and customer loyalties, and which conduct to the company a product differentiation.
[7] Metso have over 10.000 direct supplies.

in some industries. However, in other industries where Metso operates, the suppliers are significant.

Furthermore, Metso is a strong brand and offers a large variety of products, due to its different fields of activity. Moreover, this impacts the brand which can be a threat to Metso, which is difficult to enhance.

2.2.3 Buyer Power

According to Michael E. Porter (Porter, 1998), buyers compete with the industry by forcing down prices. The power of each of the industry's important buyer groups depends on several characteristics of its market situation and the relative importance of its purchases from the industry compared with its overs business.

Bargaining power is based also on the supply/demand balance. So, according to the *company "when there is more demand from customers as a whole, sellers have more power*[8]*"*. If there are many sellers and few customers for a product, customer's bargaining power will be great, so their purchasing power increases in the Metso markets.

Furthermore, according to the company, in all of their industries they have hundreds or thousands of current or potential customers and a much smaller number of sellers depending on the industries[9]. Thus, customer influence is very high in multiple market segments and clients have very important decision power.

2.2.4 Threat of Substitution

All firms in an industry are competing with industries producing substitute products. Substitutes limit the potential return of an industry. Metso is not very affected by this threat because they safeguard with patents and other IPR. The reason is that there are not real substitutes products, there are more about competitors which have similar products and services.

[8] This means that when demand declines, customers power increases.
[9] In valves and aggregates, there are many sellers but in mining only handful of big companies that operate in the world that are "true" competition to the company.

2.2.5 Industry rivalry

Rivalry occurs because one or more competitors either feels the pressure or sees the opportunity to improve position (Porter, 1998). Metso has many competitors in every sector in which the company works. As the company says, it is a reference in its industries because of the quality of the products and services the corporation sells. Furthermore, the company is attractive to customers and suppliers.

Chapter 3. Metso as a company

3.1 Company overview

Metso Corporation, an industrial company, provides equipment and services for the mining, aggregates, recycling and process industries worldwide. The company operates through two segment, Minerals and Flow Control[10]. The firm offers mining solutions, including crushing, screening, grinding, as well as spare parts, aggregates, such as crushers, screens, feeders...

The company also provides control, on-off, emergency shutdown valves; valve controls and limit switches; electric and pneumatic actuators; positioners, on-off controllers; intelligent safety solenoids; instrumentation panel; and valve spare parts. Besides, it offers metal recycling solutions, including shears, balers, briquettes, turnings and shredders, post shredder technology, and anode crusher; and waste recycling solutions, such as fine-shredders, mobile pre-shredders, and pre-shredders.

Metso Corporation is headquartered in Helsinki, Finland. Also, Metso Corporation is a publicly-quoted company with its shares listed on Nasdaq Helsinki under the trading symbol METSO.

3.2 Segments

Metso Group as a global supplier of technology and services for mining, aggregates and process industries, builts its operation strategy in two segments, which are the following, as reported by its Annual Report:

[10] According to Bloomberg information.

Firstly, Minerals Segment where Metso supplies technology, process solutions, machinery services for aggregates production, mining, minerals processing and metal and waste recycling, being the last one the most important. It is organized into five business areas: Mining Equipment, Consumables, Services and Aggregates Equipment.

Lastly, Flow Control segment, where Metso also supplies process industry flow control solutions and services. Flow Control customers operate in oil and gas, pulp and paper, and other process industries. The segment is organized into two business areas: Valves and Pumps.

3.3 Products and services

Metso offers products and services in different industries, such as the following:

Table 1. Metso's Products and Services

Mining	The company provide services and products for the whole process in mining's value chain, from the mine to the finished products of mineral concentrates or mineral pellets, according to its Annual Accounts.
Aggregates	Metso supplies to its customers with energy-efficient mobile and stationary rock crushing plants, screens, feeders and conveyors, as well as expert and maintenance services. Metso's services and spare and wear parts ensure high-quality end products and secure continuous production.
Oil&Gas and Pulp	The firm gives to the clients a variety of valve solutions and services that including industry standards for health, safety and environment.
Metal and waste recycling	In metal recycling, the company offers a wide range of efficient solutions for the fragmentation, compaction and separation of virtually every type of metal scrap. Also, in waste recycling provide to the customer for processing solid waste and side product to produce alternative fuels.

Source: Metso Website

3.2 Customers

In this point, there is a need to distinguish between different segments in which Metso operates, because the client profile can vary significantly depending on which the company works.

The Minerals segment supplies technology, process solutions, machinery and services for aggregates production, mining, minerals processing and recycling. Both global and local miners employ Metso's services to process minerals efficiently and safely. Thus, these minerals are utilized in countless everyday applications, e.g. lithium in mobile phones and copper in electric cars.

Furthermore, in the quarries, Metso has gained a huge experience in the production of high-quality aggregates and manufactured sand. Scrap yards, automotive manufacturers, and other household or industrial waste processing facilities use its efficient solutions to take care of shearing, baling... A comprehensive understanding of customers enables solving the client's challenges through tailored solutions and provides them with the best performance and improved processes. Metso is engaged in various projects that:

- Extend the life cycle of equipment and prolong maintenance cycles.
- Maintain and improve product safety and a safe working environment.
- Mitigate the environmental load through reduced emissions, waste and energy intensity.

3.3 Competitors

In this segment, main competitors of the company will be explained detailed insightfully the principal activity and its financial data, in the next table 3 called "Metso's Competitors", distinguishing by Metso's segments, such as mining, aggregates and valves[11]:

Table 2. Metso's Competitors

Mining

FLSmidth
FLSmidth & Co is a Danish producer of equipment and services for cement and minerals industries. The firm focuses its activities on four segments: Customer Services, Product Companies, Minerals and Cement (Note 1. Appendix COMPETITORS) (Reuters, s.f.). In 2018, its revenues were 2.511,38 million of euros (Note 2. Appendix COMPETITORS) (Annual Report 2018 FLSmith, 2018). Likewise, its profit was seen increased in 758% in several previous years.
Weir Group PLC
The Weir Group PLC is a United Kingdom-based company, which is engaged in engineering businesses. The Company's business operates through three segments: Minerals, Oil & Gas, and Flow Control (Note 3. Appendix COMPETITORS) (Reuters, s.f.) In 2018, company's revenues were 2.554,57 million of euros (Note 4. Appendix COMPETITORS) (The Weir Group PLC, 2018). Additionally, its profit grew 22% in relation to the previous year.

[11] Every note of different competitors is explained in Appendix 1 "Competitors".

Sandvik
Sandvik AB is an engineering company in mining and rock excavation, metal-cutting and materials technology. The Company is engaged in the developing, manufacturing and marketing processed products and services euros (Note 5. Appendix COMPETITORS) (Reuters, s.f.). Its revenues were 9.592 million of euros (Note 6. Appendix COMPETITORS) (Sandvik Annual Report 2018, 2019)
Outotec
Outotec Oyj is a Finish company within the mineral industry. It provides process solutions, technologies, and services for the mining and metallurgical industries (Note 7. Appendix COMPETITORS) (Reuters, s.f.). Its revenues were 1.276 million of euros (Outotec 2018 Annual Report, 2019)

Aggregates

Terex
Terex Corporation is a manufacturer of lifting and material processing products and services that deliver lifecycle solutions. The Company has three business segments: Aerial Work Platforms (AWP), Cranes and Materials Processing (MP) (Reuters, s.f.). (Note 7. Appendix COMPETITORS)

Valves

Emerson
Emerson Electric is a diversified global manufacturing company, which provides solutions to customers by bringing technology and engineering together in the industrial, commercial and consumer markets around the world (Reuters, s.f.). Its revenues were of 15,49 billion of euros (Note 8. Appendix COMPETITORS) (Emerson, 2019)
Flowserve
Flowserve Corporation is a manufacturer and aftermarket service provider of flow control systems. The Company's segments include Engineered Product Division, Industrial Product Division and Flow Control Division (Reuters, s.f.).

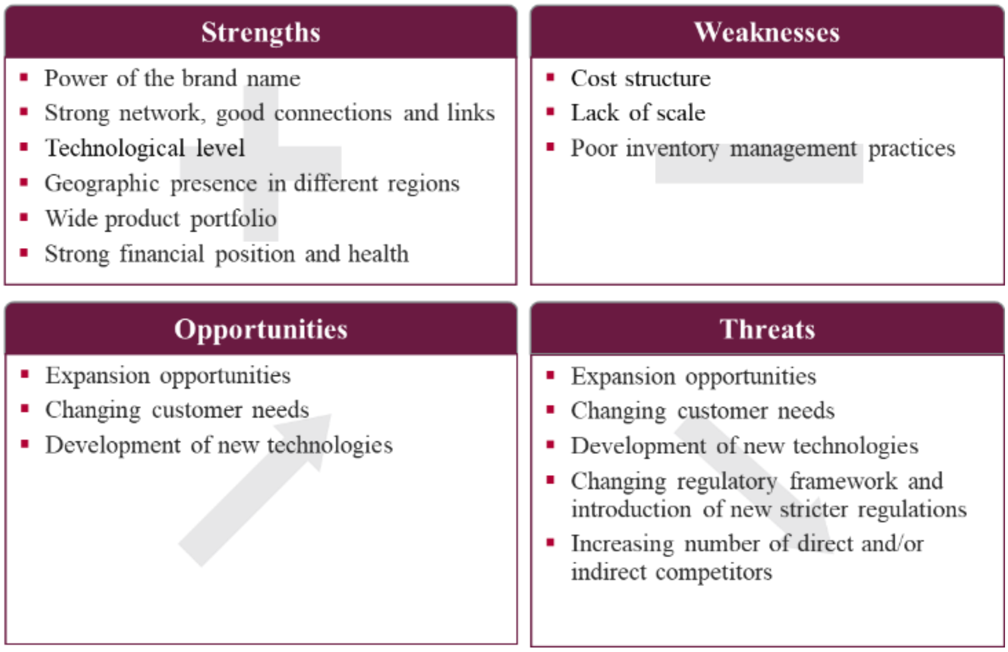
3.4 SWOT Analysis

SWOT analysis is a classical strategy analysis tool based on four fields: strengths, weaknesses, opportunities and threats (Grant, 2016, p. 11). The SWOT analysis framework has two distinctive parts. First, it investigates the internal strengths and weaknesses of a business and then provides an external view of opportunities and threats[12] (Luffman, Lea, Sanderson, & Kenny, 1996).

[12] To be successful, a company should develop competitive advantage by identifying a fit between the firm's strengths and the upcoming opportunities.

Metso's strategy is expected to remain the same in the long-term due to its efficiency. Through its strategy, Metso will be able to improve the image of the brand and, as the final point of the strategy, to create value not only for the customer but also for the shareholder[13].

Figure 1. Metso's SWOT Framework



Source: own creation

3.5 Strategic Plan

3.5.1 Values

The values are the beliefs, characteristics and behavioral norms that the direction determined that must guide the fulfilment of the vision and mission of the company, which will be described in the next point. Metso's values guide them in how they do business and how they work together with every company's partner and employee.

3.5.2 Vision and mission

Strategic vision defines the aspirations of managers through an "the place the company is going" overlook and convincing reasons why they are sensible for the business (Thompson, Gamble, Peteraf, & A.J, 2012, p. 21). Well-conceived visions are distinctive

[13] More detailed report in Appendix 2 "DAFO of Metso".

and specific to an organization. The most representative characteristic of a company's vision is that it must mention the strategic future of the company. Also, company’s mission describes the purpose and current business of the company, that is, who it is, what it does and why it is there.

The main difference between a strategic vision and a mission proposal is very clear: the vision portrays the future horizon of the company while the mission describes its activity and purpose of current business. According to Metso’s information, the best choice for sustainable processing and flow of natural resources is summarized below:

- Sustainable: Sustainability for the company means reducing energy consumption and emissions, using less raw ingredients and water and producing less and less waste while delivering the same or increased production output.
- Processing and flow of natural resources: Metso’s solutions for customers convert raw natural resources into materials that are used to build the modern world.

3.6 Financial analysis

The aim purpose of this point is to analyze the latest financial reports and therefore provide the necessary information about the Metso’s financial position. Such information is intended to be useful in making economic decisions by providing information that reflects the underlying economics of a firm’s transactions (Lessambo, 2018).

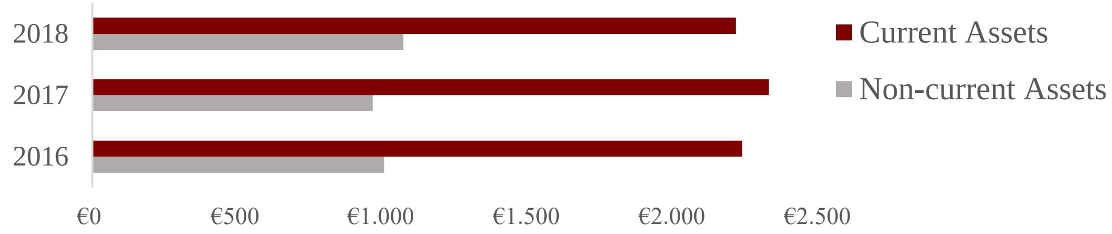
3.6.1 Balance Sheet Analysis

The Balance Sheet shows the company’s wealth at a point in time. The Metso Balance Sheet is shown in Appendix 3. Consolidated Balance Sheet (2016-2018). In the following points, its structure will be analyzed.

3.6.1.1 Asset Structure

Assets are subdivided into non-current and current assets. As the next graphic shows, the asset amount has declined from 2017 to 2018. This has happened because the company has had the same Asset structure since recent years.

Graphic 1. Assets Structure in millions of euros (2016-2018)



Source: 2016-2018 Metso Annual Reports

Firstly, the non-current assets provide the information related to the amount after accumulated depreciation, depreciation and amortization of physical assets used in the normal conduct of business to produce goods and services. This is not intended for resale which includes land, buildings, machinery and equipment, office equipment, furniture and financial assets. The most significant variations which have taken during the last three years are explained below:

- Metso 's intangible assets include goodwill[14] and other intangible assets with a definite useful life, mainly trademarks, patents, licenses, IT software or acquired order backlog are measured at costs less accumulated amortizations and impairment losses. The total amount declined 4% from 2016 to 2017 but afterwards increased from 2017 to 2018. The increase in goodwill during 2017 and 2018 has related to the acquisitions of many European companies, such as AB P.J. Jonsson och Söner or WearX Holding Pty Ltd, which comprise of the brand values in Minerals segment.
- Tangible assets are composed of buildings and structures, machinery, equipment, land and water areas. This sheet declined 13% from 2016 to 2017 but then increased from 2017 to 2018.

Lastly, the current assets[15] are:

- Inventories are shown net of a provision for obsolete and slow-moving inventories. Metso's policy is to maintain a provision for slow-moving and obsolete inventory based on the best estimate of such amounts at the balance sheet

[14] Recognized goodwill represents the excess of acquisition costs over the fair value of net identified assets acquired and liabilities assumed and the fair values of previously owned interests and non-controlling interests.
[15] Current assets are assets that are expected to be realized within a year or normal operating cycle.

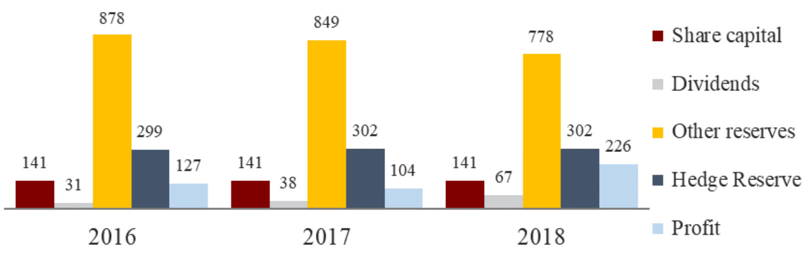
date, according to its Annual reports. Metso's inventories have growth from 2016 to 2018 around 13% (Metso, 2017).

- Receivables are invoiced receivables from customers related to Metso's ordinary business transactions. General payment terms are typically from 30 days to 90 days and they are non-interest-bearing receivables. Metso's receivables have increased from 2016 to 2018 around 13%.
- Liquid funds include "cash and cash equivalents" and "deposits and securities":
    - Cash and cash equivalents consist of cash on hand and bank accounts, deposits and interest-bearing investments, which are easily convertible to known amount of cash within the period of three months or less, with the same risk profile. In the first two years of the period of study, this sheet has decreased but then has increased in 2018.
    - Deposits and securities with maturities over three months, consist of highly liquid investments, which are part of Metso's cash management and a risky part. These commercial papers deposit and debt investments have a maturity less than twelve months, and they are measured at amortized cost.

3.6.1.2 Equity

According to FASB Statement N.6, equity is the residual interest in the assets or a firm that remains affecter deducting its liabilities. In a business enterprise, equity is the ownership interest (Financial Accounting Standars Board, 1985). he total amount declined a 5,67% from 2016 to 2017 but afterwards increased in the same proportion from 2017 to 2018.

Graphic 2. Metso's Equity Structure in Millions of Euros (2016-2018)

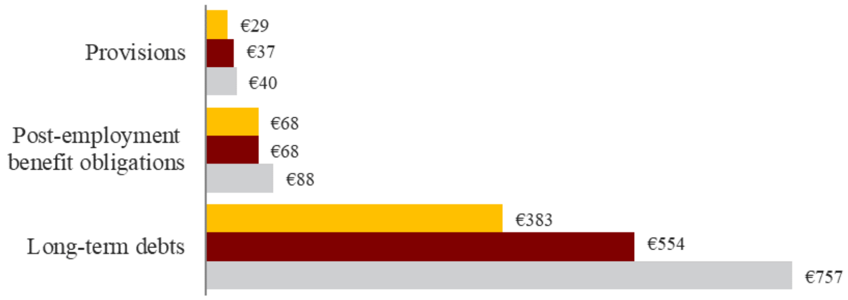


Source: 2016-2018 Metso Annual Reports

3.6.1.3 Debt Structure

According to FASB Statement N.6, liabilities are probable future sacrifices of economic benefits arising firm present obligations of an entity to transfer an asset or provide services to other entities in the future as a result of past transaction (FASB Statement N.6).

Graphic 3. Non-current liabilities Structure in Millions of Euros (2016-2018)



Source: 2016-2018 Metso Annual Reports

On the one hand, non-current liabilities can be classified as issued bonds and withdrawn loan facilities from financial institutions as well as trade and other liabilities are valued at fair value. The long-term liabilities have reduced in 25,6% relating to the previous operating cycles. This is because the company is paying its loan from financial Institutions.

On the other hand, current liabilities have been defined as "obligations whose liquidation is reasonably expected to require the use of existing resources properly classified as current assets or the creation of other current liabilities" (Sangiuolo & Seidman, 2009).

Current liabilities include sheets such as:

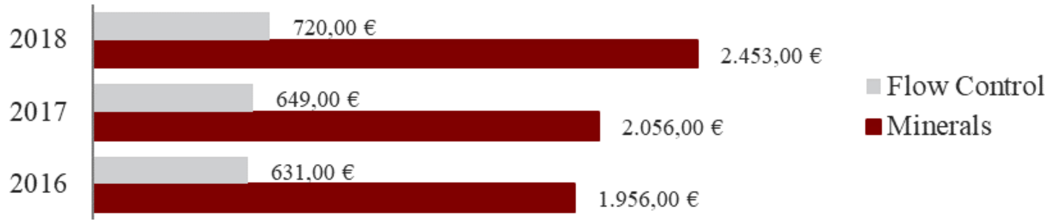
- Current portion of long-term debts. The amount of the total current portion of long-terms debts has decreased significantly from 2016 to 2018.
- Short-term debts, trade payables, provisions which have not to vary substantially.
- Income tax liabilities
- Other payables. This sheet has increased consistently in the three analyzed years.

3.6.2 Profit and Loss Statement Analysis

The income statement is sometimes referred to as the profit and loss statement. It is important because it shows the profitability of a company during the time interval specified or operative cycle. Metso's Profit and Loss Statement is shown in Appendix 4. "Consolidated Statement of Income (2016-2018).

The increase in the revenue is line up with the increase in sales from 2016 to 2018. In the last year, its revenues were of 3.173 million of euros which means 20% increased with the previous year.

Graphic 4. Sales by segments in millions of euros (2016-2018)



Source: 2016-2018 Metso Annual Reports

According to the 2018 Metso Annual Report, sales consist of sales of engineered systems, projects, equipment and related services in the different sectors where Metso operates (Metso, 2018). Principal market areas are Europe and North America which is approximately 46 percent of sales. As Graphic 4 shows, the sales, divided by Minerals and Flow Control, have increased.

Following the Income Statement Structure, the *Gross Profit* is calculated by the sales minus them costs of goods sold which include direct materials, wages and salaries plus employer social contributions, subcontracting and other direct costs, as well as a portion of production and project administration overheads and they have growth 11% in the last years on average. The gross profit has increased 731 million of euros in 2017 to 910 million of euros in 2018, this is because of the sales growth.

Other costs are the following:

- Selling, general and administrative expenses, which are costs related to marketing, selling, research, development and administrative expenses. These costs have increased from 505 mill of euros in 2017 to 546 million of euros in 2018 after a small decline in 2016.

- Other operating income and expenses comprise income and expenses that do not directly relate to the operating activity of businesses within Metso or which arise from unrealized and realized changes in fair value of foreign currency denominated financial instruments related to operations, including forward exchange contracts. These costs have increased consistently from 2016 to 2018.

The operating profit or EBIT represents the business operations profit. According to PwC, that operating profit and EBIT are among the key metrics they use to assess a company's performance. The EBIT has growth in the last years in a proper manner.

The financial incomes and expenses are associated with the financial investments or loan that the company has. Both the financial income and expenses have declined in the same proportion, because the company has paying the loan interests, but Metso has not asked to the Financial Institutions for another new loans.

By contrast, the profit before taxes and profit for the year declined from 2016 to 2017, but in the next year, it has increased, as next table shows:

Table 3. Profit before taxes and Profit for the year in million of euros (2016-2018)

	2016	2017	2018
Profit before taxes	188 €	185 €	321 €
Profit For the year	127 €	104 €	224 €

Source: 2016-2018 Metso Annual Reports

3.6.3 <u>Cash-flow Statement Analysis</u>

According to Benedict and Elliot (2011), a statement of cash flows is a statement which summaries cash inflows and outflows during the year which the other financial statements relate (Benedict & Elliott, 2011). Although the statement of Cash Flow reports the same information in a statement format identifying the net cash inflows during the accounting period, it is a very important statement that inform about the liquidity of a corporation. About the liquidity of Metso[16], it can be said that it is strong for the following reasons:

[16] Metso's Cash flow Statement is shown in the Appendix 5. "Consolidated Cash Flow Statement (2016-2018)"

- There has been a cash inflow of 673 million of euros, but this amount has been decreased with the previous year.
- Its cash and cash equivalent have changed from a positive 698 to a 673 million of euros from 2016 to 2017 and this amount has decreased from 673 to 426 million of euros in 2018.

3.7 Ratios analysis

3.7.1 Liquidity ratios

Liquidity ratios measure the company's ability to pay short-term debt obligations and they let to the company analyze and evaluate their ability to make loan payments or pay suppliers. Also, these ratios help to investors to see and decide if the company in which they will invest in is profitable (Rist & Pizzica, 2015).

Table 4. Liquidity ratios Summary

	2016	2017	2018
Acid Test	1,71	1,25	0,93
Cash Ratio	0,78	0,41	0,26
Current Ratio	2,51	1,84	1,63
Working capital	1.345 €	1.065 €	862 €

Source: own creation on 2016-2018 Metso Annual Report

The Acid Test Ratio shows whether a company has enough short-term assets to cover its immediate liabilities without selling inventory. It provides a snapshot of financial strength and flexibility by indicating how long the institution could function using its expendable reserves without relying on additional net assets generated by operations (KPMG, 2002). Although the Acid test is high, the company has the ability to pay its short-term liabilities, this ratio has been declined over years (See Appendix 6. Ratios' evolution and formulas (2016-2023))

The Cash Ratio measures the company's liquidity. It further refines both the current ratio and the quick ratio by measuring the amount of cash and cash equivalents there are in current assets to cover current liabilities (KPMG, 2002). This means that the company can pay off 78% in 2016, 41% in 2017 and 26% in 2018, of its current liabilities without generating additional cash. This amount has been decreased (See Appendix 6. Ratios' evolution and formulas (2016-2023))

The Current Ratio indicates the extent to which current liabilities can be “covered” by current assets. Current assets include inventory, accounts receivable, cash, and securities. Current liabilities include accounts payable, short-term notes, current portion of long-term debt, and accrued expenses (KPMG, 2002). Thus, the company has almost two and a half times more current assets than current liabilities in 2016. This ratio has been reduced year on year. (See Appendix 6. Ratios’ evolution and formulas (2016-2023)).

3.7.2 Performance ratios

Performance ratios (also known as *activity ratios*) measure a company’s ability to generate sales and derive profit from its resources. Performance ratios are used to measure the relative efficiency of a company based on the use of its assets, leverage, or other such balance sheet items (Rist & Pizzica, 2015). Companies must often strike a balance between the inefficiencies of having too few or too many assets. For example, in the case of too little inventory, you may risk disruption to production and loss of sales.

Table 5. Performance ratios Summary

	2016	2017	2018
Net Operating Profit after taxes (NOPAT)	153,35	123,68	244,24
Operating Profit Margin	8,78%	8,13%	11,03%
Gross profit	28,5%	27,25%	28,87%
Inventory turnover	3,6474	3,6067	3,34
Inventory conversion period	139,96	139,1	153,63
Receivable turnover	1,3986	1,3745	1,4058
Total Assets turnover	0,7822	0,8005	0,9438

Source: own creation on 2016-2018 Metso Annual Report

The *operating profit margin* is a measurement of what proportion of a company’s revenue is left over after paying for variable costs of production such as wages, raw material... A healthy operating margin is required for a company to be able to cover other costs such as depreciation, interest expenses, profit to shareholders, and profit to invest in the growth of the company (Rist & Pizzica, 2015). For example, an operating profit margin of 8,78% in 2016 means that for every 100 Euros of sales, the company generates 8,76 euros of EBIT. Metso’s operating profit margin has increased from 2016 to 2018. (See Appendix 6. Ratios’ evolution and formulas (2016-2023)).

The gross profit margin measures how much gross profit is generated for each euro of sales. The gross profit has to cover the company’s operating expenses, depreciation and amortization, finance cost, and taxes (Rist & Pizzica, 2015). A gross profit margin of 28,5% in 2016, means that for each 100 euros of sales generated by the company, 28,5 euros is gross profit to cover the company's operating costs (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

The *total assets turnover* ratio measures the sales generated per euro of assets and is an indication of how efficient the company is in utilizing its assets to generate sales (Rist & Pizzica, 2015). This means that for every euro invested in assets, the company generates 0,78 euros of sales in 2016. The ratio has been growing from 2016 to 2018. (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

3.7.3 Profitability ratios

Profitability ratios can be the combination of many ratios that show a more complete picture of a company's ability to generate profits (Rist & Pizzica, 2015).

Table 6. Profitability ratios summary

	2016	2017	2018
Basic Earning Power (BEP)	6,87%	6,51%	10,41%
Profit margin	4,91%	3,84%	7,03%
Return on assets (ROA)	3,84%	3,08%	6,63%
Return on sales (ROS)	0,0878	0,0813	0,1103
Return on Equity (ROE)	8,84%	7,68%	15,7%

Source: own creation on 2016-2018 Metso Annual Report

The basic earning power (BEP) shows the earning power of the company's assets before taxes and debt service (Rist & Pizzica, 2015). This means that for every 100 euros invested in assets the company generates 6,87 euros of EBIT, this amount has been increased from 2016 to 2018. This ratio is used as a measure of the effectiveness of operations (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

The profit margin is also known as net profit margin, measures how much of every dollar of sales a company keeps in earnings (Rist & Pizzica, 2015). In 2016, the company had a net profit margin of 4.91%, which means that for every 100€ of sales, 4.91€ of net income is generated. This ratio has reduced from 2016 to 2017, but in last year it has grown, meaning that the company has launched a price strategy to decrease the market share price, what makes that the dividend distribution has growth (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

The *return on assets* shows how profitable a company's assets are in generating revenue (Rist & Pizzica, 2015). ROA's formula from Appendix 6. Ratios' evolution and formulas (2016-2023), gives a ROA of 3,84% in 2016 and it has grown to 2018. This means that the company is generating 3,84 euros of net income for every 100 euros invested in assets (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

Metso has not efficiently used shareholders' funds last year, because the ROE was less than 20%. On the other hand, Metso used its assets more efficiently that the competitors, based on ROA calculations.

Return on Equity (ROE) measures the company's profitability by how much profit is generated with the money shareholders have invested (Rist & Pizzica, 2015). This gives a return on equity (ROE) of 8,84%, which means that for every 100 euros of equity the company generates 8,84 euros of net income.

The investors should invest in companies with high ROE, because it measures the profitability of the firm by how much profit is generated with the money that they have invested in. (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

3.7.4 Debt ratios

Debt ratios measure the company's overall debt load and the mix of equity and debt. Debt ratios give us a look at the company's leverage situation. Debt ratios can be good, bad, or indifferent, depending on a host of factors including who is asking.

For example, a high total debt ratio may be good for stockholders not wanting to dilute their shares but bad for the creditors of the company (Rist & Pizzica, 2015).

Table 7. Debt ratios summary

	2016	2017	2018
Asset-to-Equity	2,3022	2,4956	2,3676
EBITDA to interest coverage	15,681	15,681	26,171
Debt ratio	54,08%	57,35%	55,35%
Gearing	1,2451	1,4313	1,312
Interest coverage	4,8298	4,6809	10

Source: own creation on 2016-2018 Metso Annual Report

The asset-to-equity ratio (also known as the equity multiplier) gives a sense of how much of the total assets of a company are really owned by shareholders as compared to those that are financed by debt. Some businesses thrive more on borrowing money (leverage) than other companies (Rist & Pizzica, 2015). This gives an asset-to-equity ratio of 2,3 in 2016, 2,49 in 2017 and 2,36 in 2018, which means that the company has around 2,3 euros of assets for every euro of shareholder equity.

This ratio must show the real value, because if it is not calculated appropriately, the shareholder's investment can be damaged, as occurred with Lehman Brothers bankrupting in 2008 (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

The debt ratio, also known as debt to asset ratio or debt to capital ratio, shows the proportion of a company's total debt relative to its assets. This measure gives an idea as to the leverage of the company along with the potential risks the company faces in terms of its debt-load (Rist & Pizzica, 2015). This ratio shows an average of 55% from 2016 to 2018. In addition, this means 55% of the company's assets are financed by the creditors and debt. Therefore 45% is financed by the owners (equity). A higher percentage indicates more leverage and more risk (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

Gearing ratio measures how much of the company is financed by its debt holders compared with its owners and it is another measure of financial health. A company with a large amount of debt will have a very gearing ratio, whereas one with little debt will have a low gearing ratio (Rist & Pizzica, 2015). This ratio gives an average of 1,5 from 2016 to 2018 (See Appendix 6. Ratios' evolution and formulas (2016-2023)).

Chapter 4. Company's valuation

4.1 Introduction

To determine the value of one company, there is a need to analyze the company financial structure in deep. In traditional countries, this need and interest in the company valuation has been growing over the years. This is not only to know the price or value of the company, but rather merely to develop business strategies.

McTaggart, Kontes and Mankins define value creation as managing the performance of individual business units concerning to the cash flow generated or rates of return earned over time. (McTaggart, Mankins, & Kontes, 1994).

Successful enterprise level strategies depend on the value creation insights, which involve an understanding of managers about how to improve the performance of business, because the result of the valuation affect to every level of the company, from financial to human resources department. Companies determine their value in the following cases:

- Purchasing, selling or restructuring the whole business or its part.
- Accessing to the stock markets.
- Determining the company's securities value and company's solvency.
- Crisis management, bankruptcy.

In the following sections, the Metso's financial statements will be forecasted for a 5 years' timeline and the valuation methods, using these hypotheses, will be presented hereunder.

4.2 Financial statement's forecast

4.2.1 Balance Sheet Forecast

Based on historical data, the main drivers of the balance sheet have been forecasted. Its structure is the following:

Table 8. Summary of Balance Sheet forecasted in millions of euros

	2019	2020	2021	2022	2023
Non-Current assets	**1.162 €**	**1.208 €**	**1.229 €**	**1.263 €**	**1.321 €**
Intangible assets	774 €	787 €	800 €	812 €	825 €
Tangible assets	214 €	223 €	201 €	184 €	178 €
Financial and other assets	174 €	198 €	228 €	268 €	319 €
Current Assets	**2.348 €**	**2.474 €**	**2.589 €**	**2.675 €**	**2.780 €**
Inventories	1.013 €	1.051 €	1.075 €	1.092 €	1.105 €
Receivables	820 €	837 €	848 €	856 €	862 €
Liquid funds	515 €	586 €	665 €	726 €	813 €
Total assets	**3.510 €**	**3.681 €**	**3.818 €**	**3.938 €**	**4.100 €**
Equity attributable to shareholders	**1.575 €**	**1.609 €**	**1.688 €**	**1.936 €**	**2.216 €**
Liabilities	**1.935 €**	**2.072 €**	**2.130 €**	**2.003 €**	**1.886 €**
Long-term liabilities	568 €	531 €	494 €	475 €	475 €
Short-term liabilities	1.367 €	1.541 €	1.636 €	1.528 €	1.411 €
Total Equity and liabilities	**3.510 €**	**3.681 €**	**3.818 €**	**3.938 €**	**4.100 €**

Source: own creation on 2016-2018 Metso Annual Report

The table above displays the results of balance sheet statement forecasts. Sometimes, given the fact that not much information is available regarding company some assets and liabilities structure, it has been assumed that those sheets will grow at the average growth rate of the past years, as it can be seen in the following paragraphs.

Starting by the Assets Structure, the non-current assets structure includes intangible items, which include: goodwill and other intangible assets, such as patents, licenses and capitalized software. Both of them will increase according to historical data, as Appendix 7 "Balance Sheet Forecast and Hypothesis" shows.

The company is going to invest depending on its investment necessities. Amortization is the depreciation or loss of value suffered by investments in fixed assets (equipment, machinery, etc.). According to the consultancy Ernst & Young report named "Worldwide Capital and Fixed Assets Guide[17]", (Enrst & Young, 2018) the amortization of the assets[18] in Finland, and which Metso applies in the next 5 years, is summarized in the table below:

Table 9. Amortization's percentage used by Metso

Other intangible assets	Buildings and structures	Machinery and equipment
25%	7%	25%

Source: Worldwide Capital and Fixed Assets Guide

Also, Working Capital Requirements which are the necessary money that the company needs to maintain its operative cycle and can use on the day-to-day. Regarding it, it has been calculated following the next table:

Table 10. Working Capital Requirements' Calculation Summary

	2019(e)	2020(e)	2021(e)	2022(e)	2023(e)
Inventories	1.013 €	1.051 €	1.075 €	1.092 €	1.105 €
Receivables	820 €	837 €	848 €	856 €	862 €
Operative Cash	368 €	379 €	389 €	399 €	421 €
Current Assets	2.201 €	2.267 €	2.313 €	2.348 €	2.388 €
Trade and other payables	413 €	403 €	397 €	393 €	391 €
Short-term debts	1 €	1 €	1 €	1 €	1 €
Current Liabilities	414 €	404 €	398 €	394 €	392 €
NOF	1.787 €	1.863 €	1.914 €	1.953 €	1.996 €
NOF Variation	102 €	75 €	52 €	39 €	43 €

Source: own creation on Metso information

[17] The Worldwide Capital and Fixed Assets Guide Report of the consulting group Enrst & Young, provides information on the regulations relating to fixed assets and depreciation in each jurisdiction of study.
[18] Detailed amortization tables are in Appendix 7 "Balance Sheet Forecast and Hypothesis"

Working capital and strategic choices are two concepts that have been widely discussed because they impact many aspects of business and financial management (Frecka, Thomas J.; Lee, Cheng F, 1983). Current assets and liabilities, cash flow policies which have been derived from working capital have been examined primarily for their impact on a firm's value. Non-current assets also include tangible and financial assets, which are summarized in the below table:

Table 11. Tangible and Financial Assets Structure in millions of Euros (2019-2023)

	2018(r)	2019(e)	2020(e)	2021(e)	2022(e)	2023(e)
Intangible assets	**665 €**	**772 €**	**782 €**	**792 €**	**801 €**	**810 €**
Goodwill	525 €	526 €	527 €	528 €	529 €	531 €
Other intagible assets	224 €	246 €	255 €	264 €	272 €	279 €
Patents and licences	24 €	28 €	30 €	32 €	33 €	34 €
Capitalized software	82 €	87 €	92 €	97 €	102 €	108 €
Other intangible assets	118 €	132 €	134 €	135 €	136 €	137 €
Tangible assets	**248 €**	**215 €**	**226 €**	**209 €**	**193 €**	**189 €**
Land and water areas	38 €	39 €	39 €	39 €	40 €	40 €
Buildings and Structures	217 €	212 €	216 €	218 €	220 €	221 €
Machiniery and equipment	529 €	537 €	591 €	604 €	629 €	673 €
Assets under construction	31 €	38 €	45 €	53 €	63 €	74 €
Financial and other assets	**155 €**	**165 €**	**174 €**	**183 €**	**193 €**	**204 €**
Investments in associated comp	4 €	4 €	4 €	4 €	4 €	4 €
Non-current financial assets	12 €	15 €	16 €	17 €	18 €	20 €
Deferred tax assets	101 €	103 €	105 €	108 €	110 €	112 €
Other non-current assets	38 €	43 €	48 €	54 €	61 €	69 €

Source: own creation on Metso information

According to company's data, such sheets would increase depending on the year, but by the lack of information available, the forecasted items will growth following the historical evolution shown in Appendix 7 "Balance Sheet Forecast and Hypothesis"

Current assets are presented in Table 3. Future Current Assets Structure in Appendix 7 "Balance Sheet Forecast and Hypothesis". Inventories and receivable will growth according to the company's annual growth. And their variations will be going declining over the years under review. This is summarized in Appendix 7 "Balance Sheet Forecast and Hypothesis"

The company's liabilities can be divided into two parts:

- Non-current assets include items such as long-term debt; post-employment benefit obligations; long-term provisions and other liabilities. The company is not going to ask any loan in the future. If it were the case that the company would need a loan, the company would ask for it only for extraordinary expenses, but this is not covered by the company and is for this reason that the long-term debt form financial institutions will be decreased over the years.
- Current liabilities are current portion of current long-term debt, short-term debt, trade payables, other payables and income tax liabilities[19].

4.2.2 Profit and Loss Forecast

Based on historical data, the main drivers for the Profit and Loss account forecast are calculated and explained below. Consequently, to evaluate the status of the company and to know how the market position of the company is, and in order to give it some investment proposals, it has been considered a 5 years' timeline.

Table 12. Profit and Loss Account Forecast in millions of euros (2019-2023)

EUR Million	2019(e)	2020(e)	2021(e)	2022(e)	2023(e)
Sales	3.432 €	3.672 €	3.920 €	4.180 €	4.439 €
Cost of goods sold	- 2.486,47 €	- 2.661,00 €	- 2.794,40 €	- 2.941,68 €	- 3.083,79 €
Gross profit	**945,19 €**	**1.010,85 €**	**1.125,31 €**	**1.238,06 €**	**1.371,79 €**
Selling, general and administrative expenses	-563 €	-580 €	-599 €	-618 €	-638 €
Other operating income and expenses	-29 €	-43 €	-62 €	-87 €	-120 €
Operating profit	**353,59 €**	**387,60 €**	**464,65 €**	**532,93 €**	**613,49 €**
Financial income	6 €	6 €	6 €	6 €	6 €
Financial expenses	-86 €	-82 €	-79 €	-40 €	-37 €
Financial expenses, net	**- 79,86 €**	**- 76,07 €**	**- 73,21 €**	**- 33,97 €**	**- 30,33 €**
Profit before taxes	**273,73 €**	**311,52 €**	**391,44 €**	**498,96 €**	**583,16 €**
Income taxes	-81 €	-102 €	-135 €	-179 €	-226 €
Profit For the year	**232,59 €**	**246,69 €**	**291,98 €**	**323,76 €**	**346,05 €**

Source: own creation on Metso information

Metso's sales have been growing across the timeline under review. Following the company historical data, the sales will increase at a sustained rate of 8% per year. The

[19] See Appendix 7 "Balance Sheet Forecast And Hypothesis"

company find a sustained and efficient growth in its product lines, which is an ambitious strategy. The company divides its sales in two segments, as the table below shows, and it is described previously. This rate has been calculating studying the selling annual growth plus the Finland PIB annual growth, as the next tables shows and Appendix 8. Income Of Statement Forecast And Hypothesis.

Table 13. Estimated sales in millions of euros (2019-2023)

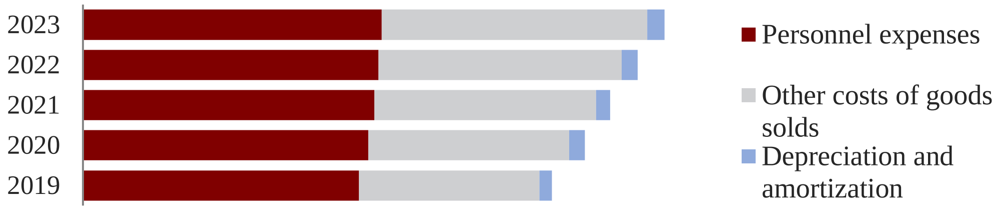
	2018(r)	2019(e)	2020(e)	2021(e)	2022(e)	2023(e)
Sales	3.173,00€	3.431,66€	3.671,85€	3.919,71€	4.179,74€	4.439,4 €
Minerals	2.453,00€	2.662,01€	2.875,66€	3.099,49€	3.337,25€	3.575,13€
Annual increase		*8,52%*	8,03%	7,78%	7,67%	7,64%
Flow Control	720,00€	769,65€	796,19€	820,21€	842,49€	863,46€
Annual increase		*6,90%*	3,45%	3,02%	2,72%	2,49%

Source: own creation on Metso information

Cost associated to the sales are calculated following the annual average rate of sales growth and ratio Expenses/Sales and they include the following items[20], and which will be increasing over the years, as the below graphic shows:

- Personnel expenses.
- Other costs of goods sold.
- Depreciation and amortization.

Graphic 5. Cost of sales' structure (2019-2023)



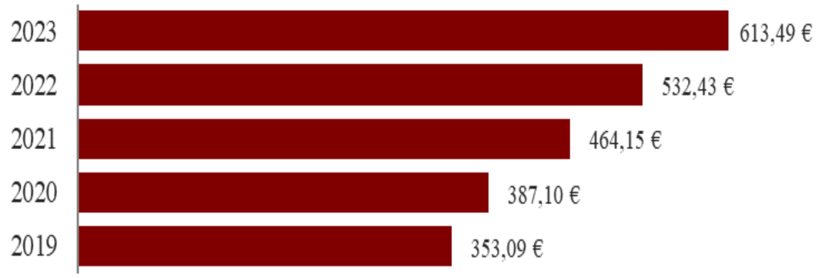
Source: own creation on Metso information

Next costs calculated are[21]:

- Selling, general and administrative expenses.
- Other income costs, which include the costs associated with the asset fair value and the rents.

[20] More details in Appendix 8. Income Of Statement Forecast And Hypothesis
[21] These costs also are going to grow following annual growth.

Graphic 6. Operating Profit in MILL EUR (2019-2023)

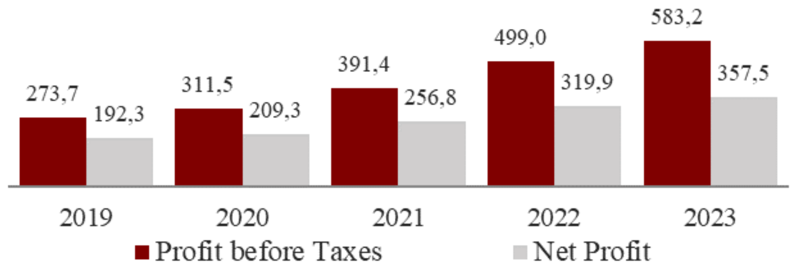


Source: own creation on Metso information

Accordingly, the operating profit is estimated, as can be seen on the graphic 7, operating profit will increase by average more than 10% in the period under review

As the below graphic shows, both Profit before taxes and Net Profit will be growth at the same level:

Graphic 7. Profit before Taxes and Net Profit in MILL EUR (2019-2023)



Source: own creation on Metso information

4.2.3 CashFlow Forecast

Following the latest forecasts, the cashflow statement is the following:

	2019	2020	2021	2022	2023
Net Income/Starting Line	232,6	246,7	292,0	323,8	346,0
Depreciation/Depletion	(65,8)	(83,5)	(74,9)	(85,9)	(92,2)
Non-cash Items	152,1	170,8	195,0	226,9	269,5
Unusual Items	(2,0)	(2,0)	(2,0)	(2,0)	(2,0)
Other Non-Cash Items	154 €	173 €	197 €	229 €	271 €
Changes in Working Capital	(125,9)	(164,6)	(121,1)	(90,0)	(107,8)
Cash from Operating Activities	**192,9**	**169,4**	**291,0**	**374,7**	**415,5**
Capital Expenditures	(64,6)	(72,5)	(81,4)	(91,5)	(103,3)
Other Investing Cash Flow Items, Total	(31,3)	(34,7)	(37,6)	(40,1)	(42,3)
Acquisition of Business	(36,3)	(39,7)	(42,6)	(45,1)	(47,3)
Sale of Fixed Assets	5,0	5,0	5,0	5,0	5,0
Purchase of Investments	0,0	0,0	0,0	0,0	0,0
Other Investing Cash Flow	0,0	0,0	0,0	0,0	0,0
Cash from Investing Activities	**(132,1)**	**(146,9)**	**(161,6)**	**(176,7)**	**(192,9)**
Financing Cash Flow Items	1,0	1,0	1,0	1,0	1,0
Total Cash Dividends Paid	(186,1)	(172,7)	(204,4)	(161,9)	(179,4)
Issuance (Retirement) of Debt, Net	(125,0)	1,0	1,0	1,0	1,0
Short Term Debt, Net	37,0	37,0	37,0	19,0	1,0
Long Term Debt Issued					
Long Term Debt Reduction	(162,0)	(36,0)	(36,0)	(18,0)	0,0
Cash from Financing Activities	**(310,1)**	**(170,7)**	**(202,4)**	**(159,9)**	**(177,4)**
Foreign Exchange Effects	(6,0)	(6,0)	(6,0)	(6,0)	(6,0)
Net Change in Cash	**(249,2)**	**(148,2)**	**(73,0)**	**38,2**	**45,1**
Net Cash - Beginning Balance	426,0	485,7	528,2	578,9	640,0
Net Cash - Ending Balance	485,7	528,2	578,9	640,0	726,5
Cash Interest Paid	25,0	25,0	25,0	25,0	25,0
Cash Taxes Paid	100,1	115,1	132,3	152,2	175,0
Free Cash Flow	**257,5**	**241,9**	**372,4**	**466,2**	**518,7**

Source: own creation on Metso information

4.3 Market Value Approaches

According to many academics, this valuation method is one of a favorite models, used in most of the valuation approaches, because it relies on the cash flow (inflows and outflows) of the company, rather than on accounting-based earning, which were seen in the last points. The DFC is gaining in popularity because of its close link to economic theory and competitive strategy. Economic profit highlights whether a company is earning its cost of capital and how its financial performance is expected to change over time. The DFC streams at the weighted average cost of capital (WACC). According to Koller, Goedhart and Wesslels (2010), WACC-based models work best when a company maintains a relatively stable debt-to-value ratio. If a company's debt-to-value ratio is expected to vary, WACC-based models can still yield accurate results but are more difficult to apply (Koller, Goedhart, & Wessels, 2010).

Equation 1. Company Value through DFC method

$$VA = \sum_{i=1}^{n} \frac{FC_i}{(1+k)^i} + \frac{VR}{(1+k)^n}$$

Where:

- AV: Actual value
- CF: Cash Flow
- VR: Residual Value
- K: Discount rate

The enterprise DCF model discounts free cash flow at the weighted average cost of capital, meaning the blended cost for all investor capital.

4.3.1 Estimated Values

In this section, the estimated values needed for the valuation, will be calculated. To measure the Weighted Average Cost of Capital (WACC), which is the rate of return that investors expect to earn from investing in the company and therefore the appropriate discount rate for the free cash flow (Koller, Goedhart, & Wessels, 2010). Also, this rate represents the opportunity cost that investors face for investing their funds in one particular business instead of others with similar risk. WACC equals the weighted average of the after-tax cost of debt and cost of equity:

Equation 2. Weighted Average Cost of Capital's Equation

$$WACC = Ke * \frac{E}{E+D} + Kd * (1-t) * \frac{D}{E+D}$$

Where:

- Ke is cost of equity
- Kd is cost of debt
- E is total amount of Equity
- D is total amount of Debt

Firstly, shareholder (ke) and debt (Kd) interests, will be measured. The cost of equity is determined by three factors, using Capital Asset Pricing Model (CAPM):

- Risk-free rate of return.

- Market-wide risk premium (the expected return of the market portfolio less the return of risk-free bonds).
- Risk adjustment that reflects each company's riskiness relative to the average company, which is the beta.

To determine the three following factors, next data was used:

- Risk-free return. the Finland Government Bond (10 years) it was looked.
- Risk market return is the Average market risk premium following Thomson Reuters Eikon data
- Beta is calculated according to Thomson Reuters Eikon and Bloomberg Data.

Equation 3. Cost of Equity's Equation

$$Ke = Rf + (Rm - Rf) * \beta \;=\; 2{,}02\% \;+\; (6{,}6\% \;-\; 2{,}02\%) * 1{,}14 \;=\; 9{,}54\%$$

The cost of debt is determined following the annual report's historical data and next table:

Table 14. Summary of Cost of debt Calculation in 2018 in Millions of Euros

	2018
"Debt banking" interest	4%
Interests	25 €
Pending	635 €
"Another debt" interest	8%
Interests	10 €
Pending	131 €
Cost of debt	3,655%

Source: own creation on Metso information

- The cost of banking and another debt were calculated dividing the interest by pending debt, as table 21 summarizes.
- The total cost of debt was measured multiplying the percentage of every capital source and its interest rate calculated in the first step.

After cost of equity and cost of debt calculation, the WACC can be measured, as summarizes next table 22. Summary of WACC Calculation in 2018:

Table 15. Summary of WACC Calculation in 2018

Ke	Kd	Equity	Financial Debt	WACC
9,54%	3,65%	73%	27%	7,12%

Source: own creation on Metso information

4.3.2 Valuation

To make the valuation, it is needed to calculate the discounted Free Cash Flows in millions of euros of the studied years:

Table 16. Metso Valuation using DFC valuation method in 2018 in million of euros

	2018(r)	2019(e)	2020(e)	2021(e)	2022(e)	2023(e)
Earnings	3.431,7	3.671,9	3.919,7	4.179,7	4.439,4	4.439,4
Costs	(3.078,6)	(3.284,8)	(3.455,6)	(3.647,3)	(3.841,9)	(3.841,9)
EBITDA	**353,09 €**	**387,10 €**	**464,15 €**	**532,43 €**	**597,49 €**	**597,49 €**
	10%	11%	12%	13%	13%	13%
Depreciation/Depletion	(65,8)	(83,5)	(74,9)	(85,9)	(92,2)	(103,3)
EBIT	**287,24 €**	**303,58 €**	**389,24 €**	**446,49 €**	**505,25 €**	**494,23 €**
Taxes	(21,0)	(30,7)	(27,6)	(34,6)	(40,7)	(45,5)
	31%	36%	36 %	40%	44%	44%
EAIDT	**266,25 €**	**272,90 €**	**361,64 €**	**411,85 €**	**464,56 €**	**448,69 €**
Depreciation/Depletion	65,8	83,5	74,9	85,9	92,2	103,3
FCO	**332,10 €**	**356,41 €**	**436,55 €**	**497,79 €**	**556,80 €**	**551,9**
Net Working Capital Requirement	(154,7)	(135,8)	(121,1)	(90,0)	(106,5)	(106,5)
Capital Expenditure	(64,6)	(72,5)	(81,4)	(91,5)	(103,3)	(103,3)
FCF	**112,81 €**	**148,11 €**	**234,10 €**	**316,26 €**	**347,05 €**	**342,19 €**
						5931

Table 17. Metso Valuation using DFC valuation method in 2018 in millions of euros

Present Value Free Cash Flow	911 €	Debt	-1.732 €
Present Value Residual Value	4.204,98 €	Equity Value	3.383,99 €
Actual Value	5.115,99 €		

Source: own creation on Metso information

Last table summarizes how the value of the company was calculated in 2018. Firstly, the Discounted Free Cash Flow[22] was measured as the next table shows:

Table 18. Discounted Free Cash Flow summary in millions of euros

	2019	2020	2021	2022	2023	Norm
Free Cash Flow	112,81 €	148,11 €	234,10 €	316,26 €	347,05 €	342,19 €
Discounted CF	**105,31 €**	**129,07 €**	**190,44 €**	**240,17 €**	**246,03 €**	**4.205,0**

Source: own creation on Metso information

[22] The calculation process is shown in 4.1.3 “Cash flow Forecast” in page 25-26 of this thesis.

Then, the total asset value was measured, 5.115,99 million of euros. If it is subtracted the total Metso's debt, the equity value is 3.383,99 million of euros.

The equity-per-share and stock price for stakeholders is 22,56 euros[23]. The stock price in 31-12-2018 is 22,9 euros per share[24], which means that the company is overvalued[25] by the market around 1,51%, that is worth what people are willing to pay for it because of increasing investor confidence or biased consensus estimates.

Table 19. Stock price calculation

Shares	Equity	Equity-per-share
150 millions of shares	3.254 millions of euros	21,69 euros

Source: own creation

4.3.3 Sensitivity analysis

Sensitivity analysis can help to evaluate the Inputs when there is uncertainty about them. From the investor's perspective, it can focus on which inputs they can invest in and monitor them more closely (Koller, Goedhart, & Wessels, 2010).

The below table is showing a sensitivity analysis on the fair Value per share and enterprise value, calculated as above, if either the terminal value growth or the WACC level would change as parameters for the valuation exercise.

Table 20. Sensitivity analysis in Fair Value per share

		GROWTH				
	22 €	1,260%	1,270%	1,280%	1,290%	1,300%
WACC	7,000%	23,226	23,285	23,344	23,403	23,462
	7,050%	22,873	22,931	22,988	23,046	23,105
	7,120%	22,389	22,445	22,501	22,558	22,614
	7,150%	22,185	22,24	22,296	22,352	22,408
	7,200%	21,85	21,904	21,959	22,014	22,068

Source: own creation

[23] This is the price that gives this valuation method and following the proposed hypothesis explained before.
[24] Source: Bloomberg and Thomson Reuters Eikon, retrieved May 2019.
[25] Overvalued stocks trade at a market price that is significantly higher than their fair value. Therefore, the investor confidence can decrease.

Table 21. Sensitivity analysis in Enterprise value

		GROWTH				
	3.293,75 €	1,260%	1,270%	1,280%	1,290%	1,300%
WACC	7,000%	3483,9	3492,7	3501,5	3510,4	3519,3
	7,050%	3430,9	3439,5	3448,2	3456,9	3465,6
	7,120%	3358,3	3366,7	3375,1	3383,6	3392,1
	7,150%	3327,7	3336	3344,3	3352,7	3361,1
	7,200%	3277,4	3285,6	3293,8	3302	3310,2

Source: own creation

4.4 Earning-Based Approaches

Those methods are based on the company's income statement. They try to determine the company's value through the size of its earnings, sales or other indicators (Fernández, 2007). There are many methods based on the company's income statement, such as PER, sales multiples and other multiples, which will be explaining, both theoretical and practically, in the following points.

Also, the multiples analysis determines the different market values for comparable companies. Thus, the assumption is a certain ratio is applicable and can be interpreted across different companies (Corporate Finance Institute, s.f.).

Those valuation methods are very simple, which can be an advantage and disadvantage, because the value can be reduced into a single value. However, this simplicity allows a financial analyst to make quick computations to assess a company's value. (Corporate Finance Institute, s.f.).

But before those explanations, the first step in this analysis is to identify companies that can be compared with each other. This is followed by the valuation multiples' study through the process of standardization.

Under this process, each market value is to be converted into a standardized value that is relative to a key statistic (Corporate Finance Institute, s.f.):

Table 22. Competitors' ratios used in the valuation

	Epiroc AB	Alfa Laval	Kone	Wartsila	Konecranes	Cargotec
EV/Revenue	2,72	2,04	2,24	1,50	0,95	0,72
EV/EBITDA	11,07	10,62	15,63	10,37	7,79	6,81
Price/EPS	17,54	15,62	26,51	15,19	12,55	10,55
Price/CF per Share	17,69	12,66	21,30	13,57	7,84	7,28
Price/BV Per Share	4,78	3,14	8,2	3,03	5,32	4,35
Price/Rev	2,66	1,90	2,34	1,38	0,75	0,47
DPS	2,7%	2,7%	3,3%	3,9%	4,0%	3,8%

Source: data from Thomson Reuters Eikon

The companies' average are the next values, which will be used in the practical valuation. Finally, the valuation multiple is applied to a key statistic in order to accommodate variation between the group of assets being compared:

Table 23. Ratio average for the valuation

EV/Sales	EV/EBITDA	PER	Price/CF per Share	Price/BV Per Share	Price/Rev	DPS
1,66	15,8	16,32	13,39	5,01	1,58	3,4%

Source: data from Bloomberg, Thomson Reuters Eikon and companies' Annual Reports

Some multiples valuation methods will be described, both theory and practically in the following points.

4.4.1 Value of earnings. PER

According to this method, the equity's value is obtained by multiplying the annual net income by a ratio called PER[26], that is:

Equity value = PER x earnings

Empirical evidence shows that the companies that pay more dividends (as a percentage of their earnings) do not obtain a growth in their share price as a result. This is because when a company distributes more dividends, normally it reduces its growth because it distributes the money to its shareholders instead of ploughing it back into new investments.

[26] The PER (*price earnings ratio*) of a share indicates the multiple of the earnings per share that is paid on the stock market.

Table 24. Summary of PER Calculation for the valuation in millions of euros

	2018
Earning per Share	1,49 €
Earning	3.173,00 €
Equity Value	4.717,29 €
PER Calculation = Stock Price/EPS	15,4 €
Stock price (at the end of 31.12) EUR	22,9 €
DPA	1,05 €
Dividend distribution	157,00 €
Shares	149,00 €
Ke	9,54%
Net Profit	223,00 €

Source: own creation following Metso Annual Report Data and Thomson Reuters Eikon

In 2018, PER's market average is 16,33, higher than Metso's PER. This makes that this valuation will be greater than the real value.

Equation 4. PER's multiple equation

$$Metso's\ Value\ in\ 2018 = (Market\ PER * Metso's\ Net\ Profit)$$
$$= (16{,}33 * 224\ Mill\ EUR) = 3.657{,}92\ Mill\ EUR$$

If both values are compared, the Metso's valuation is overvalued around of 6,49%.

4.4.2 <u>Sales Multiple</u>

This valuation method, which is used in some industries, consists of calculating a company's value by multiplying its sales by a number. The average ratio *VE/Sales,* shown in point 4.3, will be used to calculate the Metso's value:

Equation 5. Sales Multiple's equation

$$Metso's\ Value\ in\ 2018 = \left(\frac{VE}{Sales} * Metso's\ Sales\right) - Debt\ value, net$$
$$= (1{,}66 * 3173\ Mill\ EUR) - 1.732\ Mill\ EUR = 3.540{,}47\ Mill\ EUR$$

Metso's capitalization at 31.12.2018 is 3.434,93 Mill Eur.

Although, the capitalization and Metso's value using sales multiples method, are similar, the Metso's Valuation is overvalued over 3,07%.

4.4.3 <u>Other multiples</u>

4.4.3.1 Value of the company / EBITDA

Equation 6. "VE/EBITDA" Multiple's equation

$$Metso's\ Value\ in\ 2018 = \left(\frac{VE}{EBIT} * EBITDA\right) - \ Debt\ value, net$$
$$= (15{,}81 * 321\ Mill\ EUR) - 1.732 = 3.341{,}41\ Mill\ EUR$$

If both values are compared, the Metso's valuation is undervalued around of 2,7%.

4.4.3.2 Price / Cash Flow Per Share

Equation 7. "Price/CF per share" Multiple's equation

$$Metso's\ Value\ in\ 2018 = \left(\frac{Price}{Cash\ Flow\ Per\ share} * OCF\right)$$
$$= (13{,}39 * 265\ Mill\ EUR) = 3.548{,}51\ Mill\ EUR$$

If both values are compared, the Metso's valuation is overvalued around of 3,3%.

4.4.3.3 Price / Revenue

Equation 8. "Price/Revenue" Multiple's equation

$$Metso's\ Value\ in\ 2018 = \left(\frac{Price}{Revenue} * Metso's\ sales\right) - Debt\ value, net$$
$$= (1{,}58 * 3.173\ Mill\ EUR) - 1.732 = 3.291{,}92\ Mill\ EUR$$

This valuation is undervalued around 4,16%.

4.4.3.4 Price / Book Value per share

$$Metso's\ Value\ in\ 2018 = \left(\frac{Price}{Revenue} * Metso's\ equity\right) - Debt\ value, net$$
$$= (4{,}99 * 1068\ Mill\ EUR) - 1.732 = 3.599{,}63\ Mill\ EUR$$

This valuation is overvalued around 4,79%.

4.5 Dividend Model Approach

This model assumes that the equity return is constant during the period under review:

Equation 9. Company Value using Dividend Model

$$Value = \Sigma \frac{Dividends(t)}{(1+Ke)^t}$$

Last formula means that the company value is equal to the infinite dividends' discounts to the equity cost. How it is not possible to calculate an infinite dividend forecast, it is supposed that the company is on stable growth. In this thesis the dividend Model Approach will be calculated following the next formula:

Equation 10. Company Value thought Dividend Model used in this thesis

$$Value = \frac{Dividends}{Ke - g}$$

Table 25. Metso Valuation using Dividend valuation method in millions of euros

	2018
Equity	1097
g (Growth)	4,623%
Ke	9,544%
Ke - g	4,921%
Equity Value - DDD	1.038
Debt Value	2.182
Total Value	3.228
DPS	1,053
Share Price	22,05
Share Number	149.997.000,00
Capitalization	3.306.756.152,30

Source: own creation

In this part, it has been necessary to identify the Return on Equity and pay-out ratios. With these calculations and dividing the equity by cost of capital minus the expected growth, the equity value following Dividend Model can be measured, as Table 25 "Metso Valuation using Dividend valuation method" shows.

The dividend's growth is 4,623 because it is the average of the 5 latest years.

Metso' s value is 3.212 million of euros. According to the Table 25, the share price would be 36,1 euros and not 22,9 euros (the real share price at 31.12.2018).

Chapter 5. Value Creation through Investment Proposals

5.1 Investment 1 “Acquisition of Spanish subsidiary explosive company in mining industry”

Nowadays, the global M&A[27] market remained strong with announced transaction volumes reaching 4.1 trillion of dollars.[28] Activity was largely driven by “megadeals[29]”. Positive global growth, improving cash flows, strengthening balance sheets, low cost of debt all continued to maintain and rise M&A activity. As a result, new consumption patterns, new platforms and new business models are resetting the basis of competition and reallocating value, according to J.P Morgan report (J.P Morgan, 2019).

Investors have been demonstrating a continued preference for streamlined corporate structures in conjunction with adverse reactions toward companies with excess complexity. Additionally, corporations are facing increasing pressure to maintain performance and earnings results with punitive outcomes for companies that fail to achieve projections. Therefore, companies are continuing to streamline business models to focus on core, dependable businesses that generate consistent results. When mergers or acquisitions occur, they create some of the largest mining powerhouses in the world and can have an everlasting impact on the industry (Mining Technology, 2019).

As claimed by Thomson Reuters Eikon, Industrial explosives market research said to cover the world’s major players indicates 6.7% annual growth in the market to 2022 could see its value reach US$15.88 billion at that time. The rapid development of the world’s emerging markets is expected to continue to drive an increasing need for commodities as billions of people around the world seek to improve their standard of living (Woodroof, 2019). However, in the second half of 2018, prices for several commodities back down.

In line with The Boston Consulting Group Report named “Value Creation in Mining 2019: Return to Strategy”, while supply deficits have occurred in some minerals (such as high-quality iron ore), supply shortages anticipated elsewhere have generally failed to materialize (Nieponice & Vogt, 2019).

[27] Mergers and Acquisitions.
[28] the third highest year ever for M&A volumes, according to J.P Morgan Report.
[29] Operations greater than 10 billion of dollars in size.

The proposal must be viable and credible; thus, Metso can improve its corporate profitability and produce more efficiently and on a large scale. This acquisition is about the Metso's growth in the explosive industry. Also, by including Spanish Subsidiary of Maxam into the Metso family, the company further strengthen its leading position in areas related to mining and explosives.

5.1.1 Company selection

Maxam Europe SA[30] is headquartered in Madrid, Spain and principally, is a manufacturer of explosives. It was founded in 1988. Maxamcorp Holding SL is its ultimate parent. According to its website, the company is a technology company, specialized in the design, development and fabrication of energetic materials. Its business structure is the next:

- Blasting solutions for mining, quarries and infrastructures.
- Cartridges and gunpowder for sports hunting.
- Products and services for the defence industry.
- Key raw materials for the nitro chemical industry.

5.1.2 Company valuation

This rebound in mining M&A is set to continue into 2019, leading by Chinese companies, as a dearth of exploration spending leaves the industry in need of fresh investment (Daly, 2018).

Table 26. Balance Sheet and Maxam Valuation Summary

	2020	2021	2022	2023
Current Assets	67,59 €	67,53 €	67,34 €	67,32 €
Non-current Assets	203,16 €	204,92 €	206,70 €	208,51 €
Equity	65,80	108,79	126,08	125,19 €
Short-term liabilities	111,44 €	92,54 €	93,87 €	83,59 €
Long-term liabilities	93,50 €	71,12 €	54,09 €	67,04 €

Source: own creation

In this way, after analyzing other acquisitions deals and doing the Maxam's valuation[31] through DFC method, the purchase price is 350 million of euros. Also, Metso needs to

[30] Maxam Website: www.maxam.net.
[31] Maxam Valuation in Appendix 9 "Maxam valuation and Annual Account's Forecast".

pay a significant premium to take over the acquisition. If it is considered the implication of this statement, this price is correct for the author.

The DFC valuation is summarized in next table:

Table 27. DFC Valuation of Maxam in miles of euros

Present Value Free Cash Flow	3.075 €	Debt	- 225.875,00
Present Value Residual Value	336.359,61 €	Equity Value	113.559,16 €
Assets Value	339.434,16 €	Total Value	339.434 €

Source: own creation

5.1.3 Deal's implications and value creation

In every acquisition process, both companies, buyer and seller will want to create synergies to benefit from this operation. According to Corporate Finance Institute, a synergy is any effect that increases the value of a merged firm above the combined value of the two separate firms. (Corporate Finance Institute). For this reason, the synergies would enable Metso and Maxam to combine their capabilities and generate more profits than they can by acting separately and thus reduce the costs.

The strategic and operational fit of the two companies is clear and compelling. Both companies' stockholders would gain an opportunity to participate in the upside potential of a global industry leader with a stable production portfolio and attractive growth profile. As in this case, the acquisition is between private companies, the purchase price is 300 million of euros, as Table 27 shows.

Even though Metso has enough liquidity, to carry out the operation, the company should ask a loan to Evli Bank[32] to afford the clear majority of the loan's payments.

[32] Evli has grown to become one of Finland's largest and most accomplished investment and asset management specialists (https://content.evli.com/en/firstpage.html) and will work as the deal' lead advisory.

The remaining amount will pay with company's reserves. The loan's details are summarized in the next table:

Table 28. Details of the acquisition's loan

Capital	Periods	Annual interest Rate	Monthly Interest Rate
250 mill of euros	60 months	12%	0,9489%

Source: own creation

After analyzing the implications of the proposed deal, it can be seen from this deal that the revenues, margins, and cash flows of the next years can grow around 2% every year. High Maxam Financials' expenses would make that the consolidated profit may be lower and very different from reality, this is because some strategies will also be influenced by geopolitical factors. An example of success is the purchase by big companies of small companies with an innovative product, but which have difficulties to reach the potential market for their products[33].

Synergies are not effective immediately after the merger takes place, especially in mining-industry transactions, both buyers and sellers are at risk of not creating adequate value in acquisition or disposal. Typically, these synergies are realized two or three years after the transaction. This period is known as the "phase in" period, where operational efficiencies, cost savings, and incremental new revenues are slowly absorbed into the newly merged firm (Corporate Finance Institute).

According to McKinsey Report called "A McKinsey perspective on value creation and synergies" companies can pull three levers to realize the value (Engert & Rosiello, 2010):

- Cost: capture cost savings by eliminating redundancies and improving efficiencies.
- Capital: improve the balance sheet by reducing such things as working capital, fixed assets, and borrowing or funding costs.

[33] The buyer company can take advantage of the successful product of the small company with its commercial network to achieve benefits.

- Revenue: enhance revenue growth by acquiring or building new capabilities (e.g., cross-fertilizing product portfolios, geographies, customer segments, and channels).

Metso and Maxam can share information technology. Metso may use this explosive technology in its LATAM[34] business, where the mining industry is growing faster. This synergy might allow for operational efficiencies if it is applied or used in those geographies. Likewise, both companies can have access to research and development effort and thus use in its business.

5.2 Investment 2 "Creating an own consulting department for Oil&Gas Industry"

In a competitive environment like the current one, it is necessary to optimize the company's resources to compete and grow. This investment proposition is about creating a strategic group which supports and advises Metso's clients to analyze its projects and improve its services in the future in different business areas.

Business consulting service should aim to increase business opportunities and maximize the return on investment of the future engineering project of the company. This must have an impact on building a consolidated process to improve the performance of the entire business, for example, for the purpose of clients' accessing to international gas market satisfying country natural needs on a price competitive basis.

The supposed department would develop strategic and technical tools to help and support oil and gas customers in their way to stablish new products and services that let them keep the added value of their products, focusing on the result.

With the creation of this consulting's department, it is intended to offer a strategic consulting solution by the following fields of design and engineering:

- Minimizing traffic disruption during the construction phase.
- Managing the logistics of the transition from the existing to the new infrastructure.

[34] LATAM is the acronym of "Latin American", referring to the countries of South America.

- Designing and implementing technical solutions.
- Creation of feasibility studies for small works, to the design and construction of new refineries and/or the expansion of existing ones.
- The department would deliver cost-effective solutions to clients to maximize their assets, improve competitive positioning and increase long-term business success.

It is necessary engineers and technical experts around the globe, providing a collaboration tool for solutions to complex project related to and engineering, technical, risk management, safety, and environmental advisory services. The scope would include management of consultants for financial planning, pipeline work, gas and oil work, environmental impact assessment and risk management. The company should be the project management/construction advisor of the clients.

The company would need to hire:

- Ten engineers specialized in oil and gas to manage and study the technical issues of the projects.
- Five financial consultants to study financial risks and plan the financial investments.
- Administrative assistants.
- Ten project managers.

The company would need to expend every year:

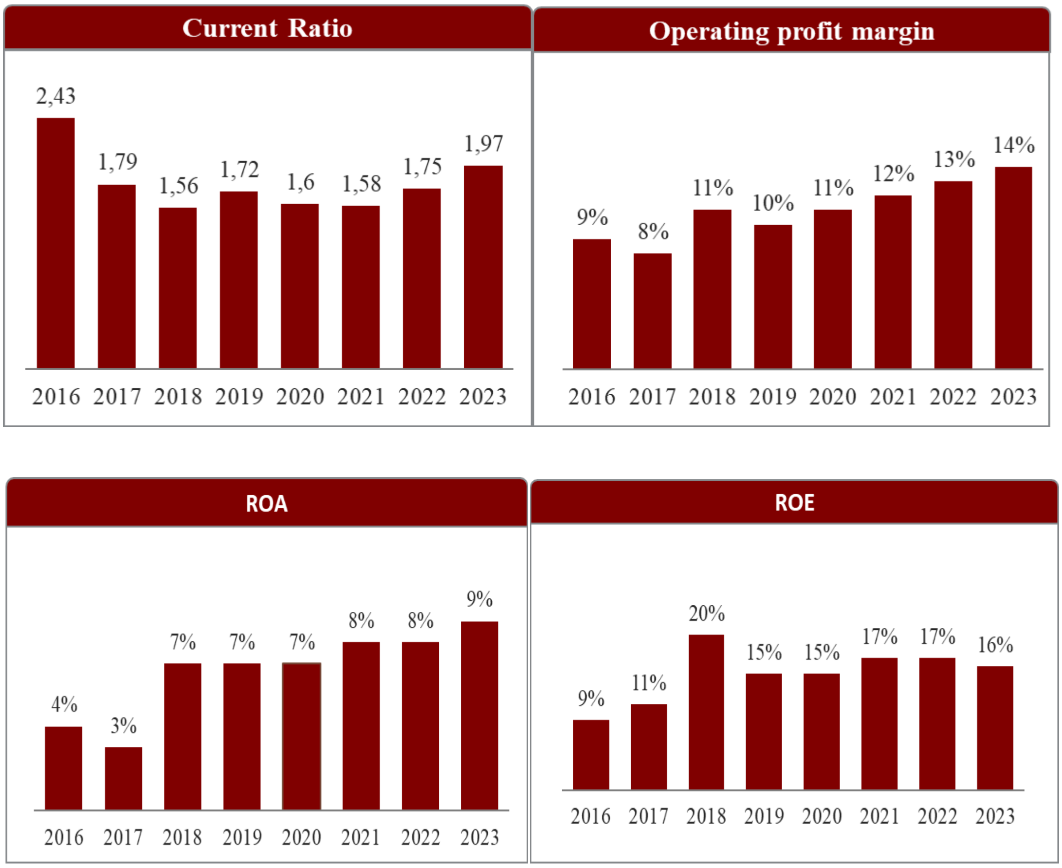
- Between 2,5 and 3 million of euros in wages.
- 259.200 euros per year in a new office rent in Tallberginkatu in Helsinki.
- Fixed costs will include light, gas and marketing expenses related to the department’s publicity, among other expenses.

Chapter 6. Conclusions

The main objective of this Master Thesis was to determine the fair value of the Finnish company named Metso from the point of view of various valuation methods such as Discounted Cash Flow or multiples methods as it will be concluded in the next paragraphs.

As it was stated previously, Metso is one of the leaders in its markets, the company outperform the competitors. Because, despite the fact that the mining industry is cyclical due to the new mineral's supply and demand, the company is expanding its line business and getting to grow speedily, as shows the Annual Accounts Report and analysis made by the author in section 3.6.

It is clear from the above that in order to predispose that the company is profitable, it is fundamental to look through the most relevant ratios such as quick ratio, operating profit margin, return on assets and Return on equity, among which it is exposed to the good financial position that the company has, generating revenues every year, for the company and including to the shareholders, as next graphics summarizes:



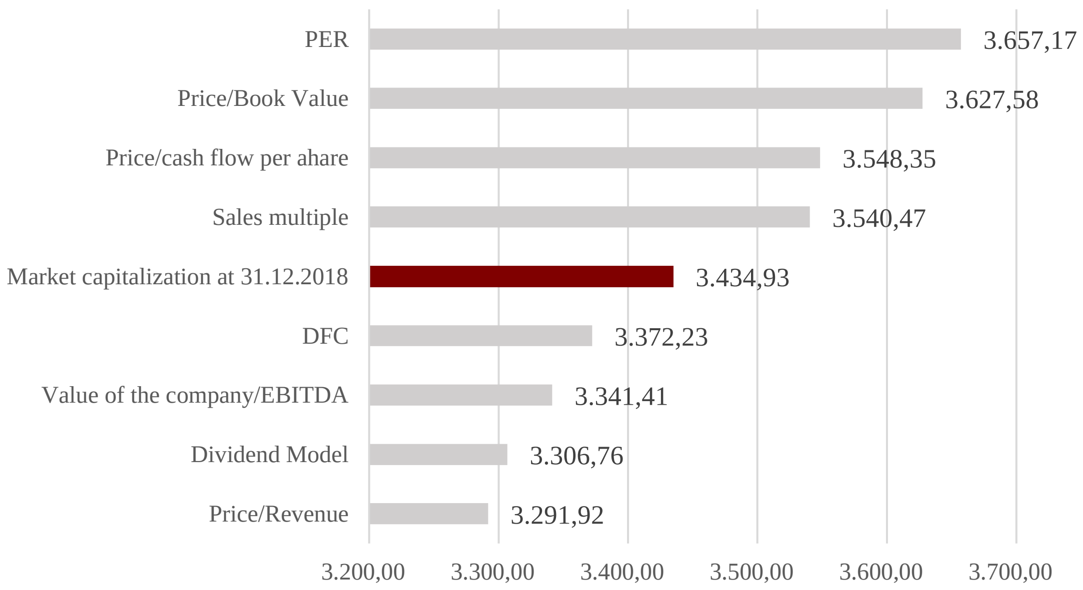
The investors should invest in companies with high ROE, because it measures the profitability of the firm by how much profit is generated with the money that they have invested in.

Successful enterprise level strategies depend on the value creation insights, which involve an understanding of managers about how to improve the performance of the business, because the result of the valuation affect to every level of the company, from financial to human resources department. Stronger financial health has also enhanced Metso to access to financing for growth through consolidated and strategic transactions, as might be the case with Maxam Acquisition proposed in the final part of the thesis. It is expecting that Metso's performance will improve its performance during the period under review because the mining sectors are returning to growth. The need to improve shareholder returns will drive bold strategies to accelerate productivity, improve margins and better allocate capital to achieve long-term growth.

Since the different methods of valuation gave different results, but always near the price quoted on the stock market, one can say that the company seems to be correctly priced, the equity value of the company in every valuation method is close to 3.400 million of euros.

Even though some models showed a slight over-valuation in the market, the stock price has been decreasing since the end of 2018, converging more to the fair price, as next graphic 9 "Summary of Metso's value in millions of euros in different methods used" outlines:

Graphic 8. Summary of Value in Millions of euros in different methods used



Source: own creation

Discounted Cash Flow valuation was calculated as a principal method which result was 4.986 million of euros. If it is subtracted the total Metso's debt, the equity value is 3.254 million of euros. The equity-per-share and stock price for stakeholders is 22,56 euros. The stock price in 31-12-2018 is 22,9 euros per share, which means that the company is overvalued by the market around 1,51%, that is worth what people are willing to pay for it because of increasing investor confidence or biased consensus estimates.

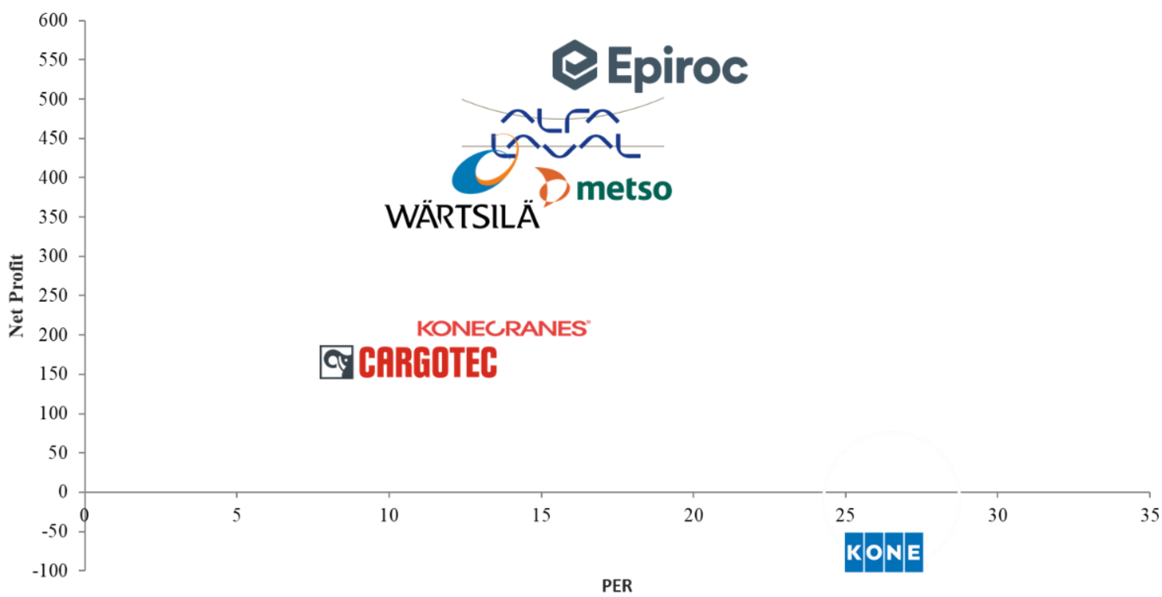
Shares	Equity	Equity-per-share
150 millions of shares	3.383 millions of euros	22,56 euros

Source: own creation

Many investors are buying the stock because they like Metso's products and services, but just because the company produces good products and services, one should not infer that company's stock is a good investment. Overvalued stocks sometimes return the outsized returns that their enthusiasts are searching for. Far too often, however, overpaying is underestimating the many things that can go wrong on the road to excess profits.

Also, the multiples were calculated to compare Metso on an overall market level to their group peers. Just as it was said before, and next graphic summarizes, Metso is leading the market along with Epiroc and Alfa Lavel, in terms of Net Profit and PER, as next graphic shows:

Graphic 9. Competitors' position



Source: own creation on Thomson Reuters Eikon Data

The results achieved in every method are adjacent to the market capitalization, which was the value that it was used for the comparison in the valuation process. The difference between those values are at least 5% over or below the market capitalization.

After financial valuations, two different investments are proposed.

- Acquisition. The industry is seeing a move toward innovative alliances and partnerships to drive growth.
- Consulting department.

With the first investment, it is proposed the Maxam's acquisition, a Spanish explosive company in mining industry. Firstly, it was done the Annual Account's forecast of Maxam to determine the price that Metso would have to pay in the deal. After doing it, the purchase price would be 350 million of euros. Metso might seek a sustained growth in those geographies where they could not have a stable position related to the mining industry.

Acquiring the explosive Maxam's technology would apply it in LATAM where they are going to expand its business and trying to get a better strategic position in these locations. Furthermore, both companies' stockholders would gain an opportunity to participate in the upside potential of a global industry leader with a stable production portfolio and attractive growth profile. For this reason, the hypothetical synergies would enable Metso and Maxam to combine their capabilities and generate more profits than they can by acting separately and thus reduce the costs.

Along the second investment, the company would try to improve its position in the service sector in Oil and Gas, providing an additional service, making it even easier to their clients could develop their strategies. Likewise, this would in turn indemnifies their market success and competitive standing because the consulting group could analyze their projects from the beginning to the end, bringing them a better performance.

It is sometimes difficult precisely to gauge the impact of that action or to evaluate the results achieved. Because if the person doing the valuation is someone outside the company with no inside knowledge of the project costs and other details of the firm, many estimations and assumptions must be made even before the actual valuation models can be built.

Accurate estimations would require professional knowledge and inside information of the project which is an unreasonable requirement for a valuator working outside the firm.

However, using publicly available information for doing the analysis it could be seen that Metso’s value could be considered overvalued in most of the studied cases, but according to the proposed hypothesis.

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Chapter 8. Appendixes

Appendix 1. Competitors

NOTE 1. Full company's description available in https://www.reuters.com/finance/stocks/overview/FLS.CO

NOTE 2. ECB Euro reference exchange rate: Danish krone (DKK). Latest (28 March 2019): EUR 1 = DKK 7.4657

NOTE 3. Full company's description available in https://www.reuters.com/finance/stocks/overview/WEIR.L

NOTE 4. ECB euro reference exchange rate: Pound sterling (GBP). Latest (28 March 2019): EUR 1 = GBP 0.85555

NOTE 5. Full company's description available in https://www.reuters.com/finance/stocks/company-profile/SAND.ST

NOTE 6. ECB euro reference exchange rate: Swedish krona (SEK). Latest (28 March 2019): EUR 1 = SEK 10.476

NOTE 7. Full company's description available in https://www.reuters.com/finance/stocks/company-profile/OTE1V.HE

NOTE 8. Full company's description available in https://www.reuters.com/finance/stocks/company-profile/TEX.N

NOTE 9. ECB euro reference exchange rate: US dollar (USD): Latest (29 March 2019): EUR 1 = USD 1.1235

NOTE 10. Full company's description available in https://www.reuters.com/finance/stocks/company-profile/FLS.

Appendix 2. DAFO of Metso

Strengths

- *Metso is a is a recognized brand in the market*, in which offers a quality of products and services. Gaining this distinction, the company can build its strategy on higher prices than its competitors.
- *Strong network and good connections.* Metso has an existing network for international cooperation, joint projects and building relations, with a broad group of partners.

Organizations in the region maintain friendly and associating connections; cultural links across the region are long standing.

- *The geographic presence in different regions* can act as one of the major strengths of the company. It determines the business's reach to the target market and ensures the easy accessibility of every sector in which Metso works.
- The *wide product portfolio* can allow the organization to expand the customer base and offset the losses from one product category with benefits obtained from the other.
- *Strong financial position and health* can allow the firm to make further investments.
- Access to the suppliers that offer raw material at a lower cost can improve the overall business efficiency and the locational advantage can improve the competitive positioning of the firm in various ways, such as lower cost, improved accessibility or enhanced brand image.

Weaknesses

- *Cost structure.* The company is mainly involved in mining, pumps and valves, energy and automation. Running these activities force Metso to build a lot of infrastructures. As said before, Metso is one of the leaders in some of these areas, which means that the infrastructures must be costly, to be more efficient than the competitors.
- *Economies of scale*. Metso favors quality over quantity. Consequently, the cost of production is very high.

Opportunities

- The *changing customer needs,* tastes and preferences can act as an opportunity if the business organization has good market knowledge.
- The *development of new technologies* to assist the products and services production and delivery process can be exploited to embed the innovation in business operations. The advanced technological integration can decrease costs, improve efficiency and result in the quick introduction of innovative products. This is a good opportunity for Metso to use the level of development of Europeans countries to improve their production in terms of quality and quantity.
- *Expansion opportunities*. The company now faces multiple possibilities. Indeed, since it has adopted a policy of expansion in the last decade, the company may choose new acquisitions or strong partnerships to maintain its leading position and gain more market share.

Threats

- *Higher revenue depending the sector*. Metso offers various types of products, but its revenue depends on the market segments. In mining field, the company does not have a lot of problems to find costumers but in the construction, there are many competitors who reduce the number of potential customers. This makes global strategy and planning unpredictable.
- The *changing regulatory framework* and introduction of new stricter regulations impose a major threat. It makes compliance with legal standards more complex and challenging for the business.
- The *increasing number of direct and indirect competitors* affects the company's ability to sustain and expand the customer base.
- The *inflation rise* increases the cost of production and affects the business profitability.

Appendix 3. Consolidated Balance Sheet (2016-2018)"

	2016 Real	2017 Real	2018 Real	
Non-Current assets	**1.003 €**	**963 €**	**1.068 €**	
Intangible assets	**579 €**	**597 €**	**665 €**	
Goodwill	452 €	466 €	525 €	
Other intagible assets	188 €	197 €	224 €	
Patents and licences	7 €	14 €	24 €	
Capitalized software	72 €	76 €	82 €	
Other intangible assets	109 €	107 €	118 €	
Amortization	-61 €	-66 €	-84 €	
Tangible assets	**315 €**	**257 €**	**248 €**	
Land and water areas	49 €	38 €	38 €	
Buildings and Structures	245 €	215 €	217 €	
Buildings and Structures - Amortization	-132 €	-131 €	-139 €	
Machiniery and equipment	568 €	545 €	529 €	
Machiniery and equipment - Amortization	-423 €	-422 €	-428 €	
Assets under construction	8 €	12 €	31 €	
Financial and other assets	**109 €**	**109 €**	**155 €**	
Investments in associated companies	0 €	1 €	4 €	
Non-current financial assets	0 €	8 €	12 €	
Deferred tax assets	88 €	75 €	101 €	
Other non-current assets	21 €	25 €	38 €	
Current Assets	**2.233 €**	**2.324 €**	**2.211 €**	
Inventories	**709 €**	**750 €**	**950 €**	
Receivables	**717 €**	**748 €**	**811 €**	
Trade and other receivables	519 €	548 €	623 €	
Cost and earnings o projects under construction in excess of advande b	93 €	81 €	84 €	
Loans and other interest bearing receivable	16 €	0 €	1 €	
Derivative Financial instruments	69 €	81 €	83 €	
Income tax receivables	20 €	38 €	20 €	
Liquid funds	**807 €**	**826 €**	**450 €**	
Cash and Casg equivalents	698 €	519 €	356 €	
Fund investments	0 €	58 €	27 €	
Deposits and securities, maturity three months or less	295 €	100 €	40 €	
Cash (control)				no
Cash on hand and bank accounts	403 €	361 €	289 €	
Deposits and securities, maturity more than three months	109 €	307 €	94 €	
Total assets	**3.236 €**	**3.287 €**	**3.279 €**	

	2016 Real	2017 Real	2018 Real
Equity	**1.409 €**	**987 €**	**1.097 €**
Equity attributable to shareholders	**1.401,00 €**	**980,00 €**	**1.087,00 €**
Share capital	141 €	141 €	141 €
Dividends	0 €	0 €	0 €
Translation	-48 €	-87 €	-101 €
Other reserves	878 €	520 €	522 €
Hedge Reserve	303 €	302 €	302 €
Profit of the year	127 €	104 €	223 €
Equity attributable to shareholders	**8,00 €**	**7,00 €**	**10,00 €**
Liabilities	**1.827 €**	**2.300 €**	**2.182 €**
Non-current liabilities	**908,00 €**	**1.003 €**	**766 €**
Long-term debts	757 €	878 €	635 €
Post-employment benefit obligations	88 €	68 €	68 €
Provisions	45 €	37 €	29 €
Derivative financial instruments	5 €	0 €	2 €
Deferred tax liability	11 €	18 €	30 €
Other long term liabilities	2 €	2 €	2 €
Current liabilities	**919,00 €**	**1.297 €**	**1.416 €**
Current portion of long-term debt	0 €	279 €	174 €
Short-term debt	28 €	21 €	42 €
Trade payables	470 €	342 €	431 €
Provisions	115 €	112 €	138 €
Advances received	186 €	198 €	208 €
Billing in excess of cost and earnings of projects under constructi	54 €	58 €	100 €
Derivative financial instruments	21 €	0 €	0 €
Income tax liabilities	45 €	70 €	61 €
Other payables	0 €	217 €	262 €
Total Shareholders' equity and liabilities	**3.236 €**	**3.287 €**	**3.279 €**

Appendix 4. "Appendix 4. Consolidated Statement of Income (2016-2018)"

EUR Million	2016 Real	2017 Real	2018 Real
Sales	2.586 €	2.705 €	3.173 €
Minerals	1.956 €	2.056 €	2.453 €
Mining	1.213 €	1.275 €	613 €
Aggregates	606 €	658 €	809 €
Reclycing	98 €	123 €	172 €
Flow Control	631 €	649 €	720 €
Oil and gas (mid and downstream)	334 €	331 €	374 €
Pulp and paper	17 €	110 €	122 €
Mining (including pumps)	107 €	110 €	122 €
Power and other process industries	107 €	91 €	108 €
Cost of goods sold	- 1.849,00 €	- 1.968,00 €	- 2.257,00 €
Gross profit	**737,00 €**	**737,00 €**	**916,00 €**
Selling, general and administrative expenses	-516 €	-505 €	-546 €
Other operating income and expenses, net	6 €	-12 €	-20 €
Share in profits and losses of associated companies	0 €	0 €	0 €
Operating profit	**227,00 €**	**220,00 €**	**350,00 €**
Financial income	8,00 €	12 €	6 €
Financial expenses	-47 €	-47 €	-35 €
Financial expenses, net	**- 39,00 €**	**- 35,00 €**	**- 29,00 €**
Profit before taxes	**188,00 €**	**185,00 €**	**321,00 €**
Income taxes	-61 €	-81 €	-97 €
Profit For the year	**127,00 €**	**104,00 €**	**223,00 €**
Profit for the year	**127,00 €**	**104,00 €**	**223,00 €**

Appendix 5. “Consolidated Cash Flow Statement (2016-2018)”

Table 30. Cash-flow Statement in million of euros (2016-2018)

	2016	2017	2018
Net Income/Starting Line	127,0	104,0	223,0
Depreciation/Depletion	61,0	59,0	58,0
Non-cash Items	99,0	107,0	149,0
Unusual Items	(10,0)	(1,0)	(2,0)
Other Non-Cash Items	109 €	108 €	151 €
Changes in Working Capital	49,0	(106,0)	(232,0)
Cash from Operating Activities	**336,0**	**164,0**	**198,0**
Capital Expenditures	(31,0)	(38,0)	(67,0)
Other Investing Cash Flow Items, Total	21,0	(28,0)	(76,0)
Acquisition of Business	0,0	(30,0)	(81,0)
Sale of Fixed Assets	21,0	5,0	5,0
Purchase of Investments	--	(2,0)	0,0
Other Investing Cash Flow	--	(1,0)	0,0
Cash from Investing Activities	**(10,0)**	**(96,0)**	**(224,0)**
Financing Cash Flow Items	(42,0)	(36,0)	1,0
Total Cash Dividends Paid	(157,0)	(157,0)	(157,0)
Issuance (Retirement) of Debt, Net	(40,0)	59,0	(272,0)
Short Term Debt, Net	(4,0)	(5,0)	14,0
Long Term Debt Issued	0,0	298,0	0,0
Long Term Debt Reduction	(36,0)	(234,0)	(286,0)
Cash from Financing Activities	**(239,0)**	**(134,0)**	**(428,0)**
Foreign Exchange Effects	10,0	(12,0)	(6,0)
Net Change in Cash	**87,0**	**(66,0)**	**(454,0)**
Net Cash - Beginning Balance	590,0	698,0	826,0
Net Cash - Ending Balance	698,0	673,0	426,0
Cash Interest Paid	29,0	24,0	20,0
Cash Taxes Paid	21,0	64,0	87,0
Free Cash Flow	367,0	202,0	265,0

Source: *Source: 2016-2018 Metso Annual Reports*

Appendix 6. Ratios' Evolution And Formulas (2016-2023)

Equation 11. Acid test equation

$$Acid\ test = \frac{Current\ Assets - Inventory}{Current\ Liabilities}$$

Equation 12. Cash Ratio equation

$$Cash\ Ratio = \frac{\text{Cash and cash equivalent}}{Current\ Liabilities}$$

Equation 13. Current Ratio equation

$$Current\ Ratio = \frac{\text{Current Assets}}{Current\ Liabilities}$$

Equation 14. Operating Profit Margin equation

$$Operating\ Profit\ Margin = \frac{\text{EBIT}}{Sales}$$

Equation 15. Gross Profit Margin equation

$$Gross\ Profit\ Margin = \frac{Sales - Cost\ of\ Goods\ Sold}{Sales}$$

Equation 16. Total Assets Turnover equation

$$Total\ Assets\ Turnover = \frac{\text{Sales}}{Total\ Assets}$$

Equation 17. Basic Earning Power equation

$$Basic\ Earning\ Power = \frac{\text{EBIT}}{Total\ Assets}$$

Equation 18. Profit Margin equation

$$Profit\ Margin = \frac{\text{Net Income}}{Sales}$$

Equation 19. ROE equation

$$Return\ on\ assets = \frac{\text{Net Income}}{Total\ Assets}$$

Equation 20. ROE equation

$$Return\ on\ equity = \frac{\text{Net income}}{Shareholder's\ Equity}$$

Equation 21. Asset-to-equity equation

$$Asset - to - Equity = \frac{\text{Total Assets}}{Shareholder's\ Equity}$$

Equation 22. Debt Ratio equation

$$Debt\ Ratio = \frac{\text{Total Liabilities}}{Total\ Assets}$$

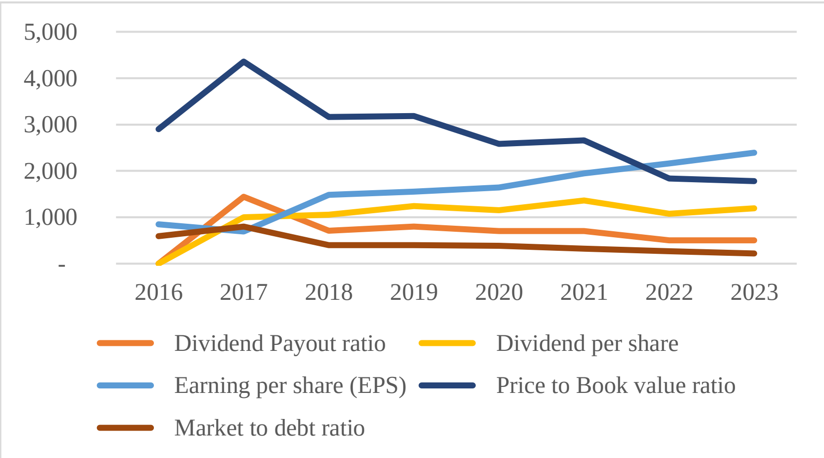
Equation 23. Gearing Ratio

$$Gearing\ Ratio = \frac{\text{Total Liabilities}}{Total\ Equity}$$

	2016	2017	2018	2019	2020	2021	2022	2023
Market Value Ratios								
Dividend Payout ratio	-	1,442	0,708	0,800	0,700	0,700	0,500	0,500
Market capitalization	4.064	4.270	3.434	4.04	3.753	4.442	3.518	3.899
Dividend per share	-	1,000	1,053	1,240	1,151	1,363	1,079	1,196
Earning per share (EPS)	0,847	0,693	1,487	1,551	1,645	1,946	2,158	2,392
Enterprise value	2.189	1.875	4.717	5.321	6.038	7.629	9.021	10.658
Price to Book value ratio	2,901	4,358	3,160	3,181	2,585	2,661	1,839	1,780
Market to debt ratio	0,590	0,799	0,398	0,397	0,385	0,324	0,267	0,219
Book value per share	9,340	6,534	7,247	8,477	9,682	11,128	12,756	14,603
Price to earning ratio (P/E Ratio)	32,007	41,061	15,403	17,392	15,216	15,215	10,867	10,865
Principal ratios								
Acid Test	1,66 €	1,21 €	0,89 €	0,98 €	0,92 €	0,93 €	1,04 €	1,19 €
Cash Ratio	0,76 €	0,40 €	0,25 €	0,31 €	0,32 €	0,35 €	0,41 €	0,51 €
Current Ratio	2,43 €	1,79 €	1,56 €	1,72 €	1,60 €	1,58 €	1,75 €	1,97 €
Working capital	1.314€	1.027€	795€	981€	932€	952€	1.147€	1.36€
Performance ratios								
Net Operating Profit after taxes	153,35	123,68	244,24	253,36	266,57	311,29	342,20	376,38

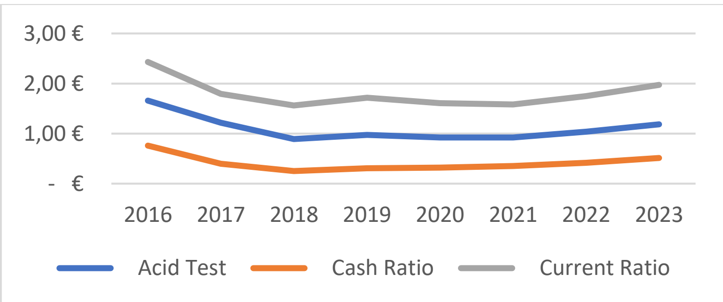
Operating profit margin	0,09	0,08	0,11	0,10	0,11	0,12	0,13	0,14
Gross profit	0,28	0,27	0,29	0,28	0,28	0,29	0,30	0,31
Inventory turnover	3,65	3,61	3,34	3,39	3,49	3,65	3,83	4,03
Inventory conversion period	139,96	139,10	153,63	148,70	144,11	140,42	135,51	130,76
Receivable turnover	1,40	1,37	1,41	1,38	1,38	1,40	1,42	1,44
Total assets turnover	0,80	0,82	0,97	0,98	1,00	1,03	1,06	1,09
Profitability ratio								
Basic Earning Power (BEP)	0,07	0,07	0,11	0,10	0,11	0,12	0,14	0,15
Profit margin	0,05	0,04	0,07	0,07	0,07	0,07	0,08	0,08
Return on assets (ROA)	0,04	0,03	0,07	0,07	0,07	0,08	0,08	0,09
Return on sales (ROS)	0,09	0,08	0,11	0,10	0,11	0,12	0,13	0,14
Return on Equity	0,09	0,11	0,20	0,15	0,15	0,17	0,17	0,16
Debt ratios								
Asset-to-Equity	2,30	3,33	2,99	2,23	2,29	2,26	2,03	1,85
EBITDA to interest coverage	15,68	15,68	26,17	26,99	28,87	32,14	35,36	39,19
Debt ratio	0,56	0,70	0,67	0,55	0,56	0,56	0,51	0,46
Gearing	1,30	2,33	1,99	1,23	1,29	1,26	1,03	0,85
Equity multiplier	2,30	3,33	2,99	2,23	2,29	2,26	2,03	1,85
Interest coverage	4,83	4,68	10,00	10,09	11,06	13,26	15,21	17,53

Graphic 10. Market ratios' evolution (2016-2023)



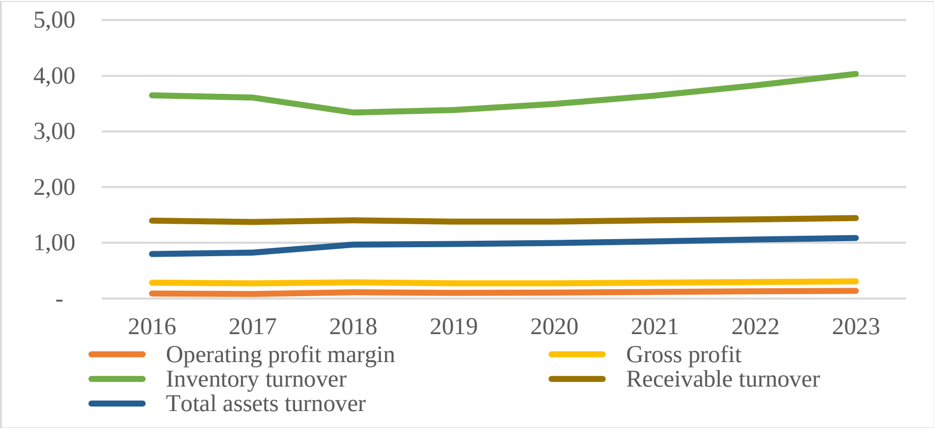
Source: own creation on Metso information

Graphic 11. Principal Ratios' evolution (2016-2023)



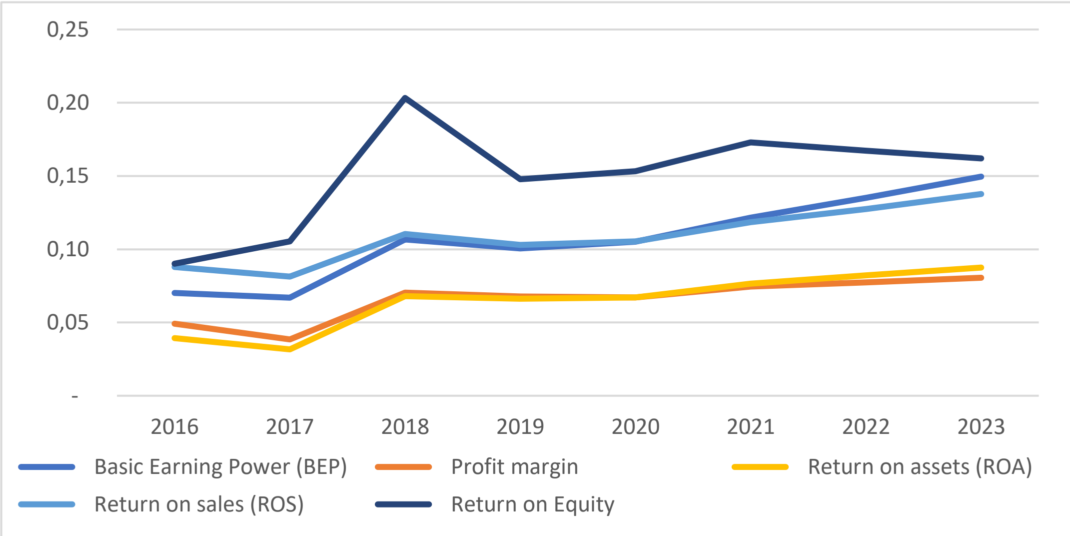
Source: own creation on Metso information

Graphic 12. Performance ratios' evolution (2016-2023)



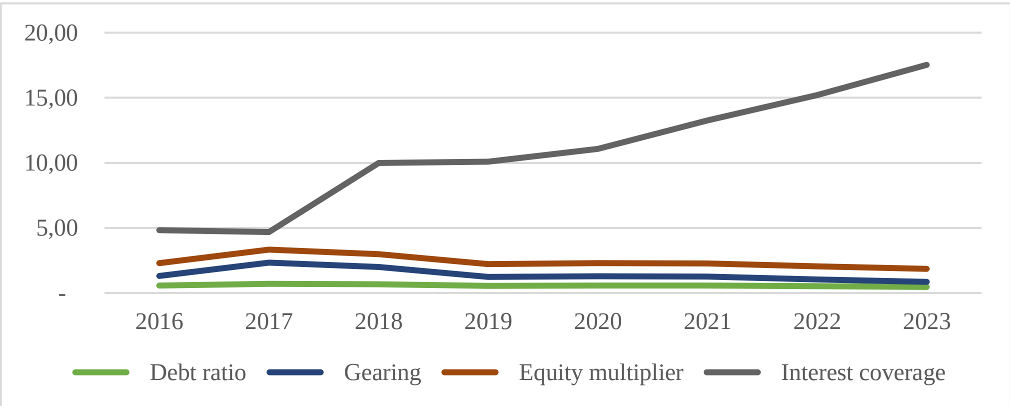
Source: own creation on Metso information

Graphic 13. Profitabity ratios' evolution (2016-2023)



Source: own creation on Metso information

Graphic 14. Debt ratios' evolution (2016-2023)



Source: own creation on Metso information

Appendix 7. Balance Sheet Forecast And Hypothesis

	2019 Estimated	2020 Estimated	2021 Estimated	2022 Estimated	2023 Estimated
Non-Current assets	**1.162 €**	**1.208 €**	**1.229 €**	**1.263 €**	**1.321 €**
Intangible assets	**774 €**	**787 €**	**800 €**	**812 €**	**825 €**
Goodwill	526 €	527 €	528 €	529 €	531 €
Other intagible assets	248 €	260 €	271 €	283 €	294 €
Patents and licences	28 €	30 €	32 €	33 €	34 €
Capitalized software	87 €	92 €	97 €	102 €	108 €
Other intangible assets	134 €	138 €	143 €	148 €	152 €
Amortization	-108 €	-135 €	-165 €	-197 €	-227 €
Tangible assets	**214 €**	**223 €**	**201 €**	**184 €**	**178 €**
Land and water areas	37 €	36 €	36 €	36 €	36 €
Buildings and Structures	212 €	216 €	218 €	220 €	221 €
Buildings and Structures - Amortization	-147 €	-156 €	-166 €	-176 €	-186 €
Machiniery and equipment	537 €	591 €	604 €	629 €	673 €
Machiniery and equipment - Amortization	-462 €	-509 €	-545 €	-588 €	-641 €
Assets under construction	38 €	45 €	53 €	63 €	75 €
Financial and other assets	**174 €**	**198 €**	**228 €**	**268 €**	**319 €**
Investments in associated companies	5 €	6 €	8 €	9 €	10 €
Non-current financial assets	15 €	19 €	24 €	30 €	38 €
Deferred tax assets	103 €	104 €	105 €	106 €	106 €
Other non-current assets	51 €	68 €	92 €	123 €	165 €
Current Assets	**2.348 €**	**2.474 €**	**2.589 €**	**2.675 €**	**2.779 €**
Inventories	**1.013 €**	**1.051 €**	**1.075 €**	**1.092 €**	**1.105 €**
Receivables	**820 €**	**837 €**	**848 €**	**856 €**	**862 €**
Trade and other receivables	651 €	667 €	678 €	685 €	691 €
Cost and earnings o projects under construction in excess of advande b	82 €	80 €	80 €	79 €	79 €
Loans and other interest bearing receivable	1 €	1 €	1 €	1 €	1 €
Derivative Financial instruments	87 €	89 €	90 €	91 €	92 €
Income tax receivables	0 €	0 €	0 €	0 €	0 €
Liquid funds	**515 €**	**586 €**	**665 €**	**726 €**	**812 €**
Cash and Casg equivalents	421 €	492 €	571 €	632 €	718 €
Fund investments	27 €	27 €	27 €	27 €	27 €
Deposits and securities, maturity three months or less	40 €	40 €	40 €	40 €	40 €
Cash (control)	53 €	113 €	182 €	233 €	298 €
Cash on hand and bank accounts	301 €	312 €	322 €	332 €	353 €
Deposits and securities, maturity more than three months	94 €	94 €	94 €	94 €	94 €
Total assets	**3.510 €**	**3.681 €**	**3.818 €**	**3.938 €**	**4.100 €**

	2019 Estimated	2020 Estimated	2021 Estimated	2022 Estimated	2023 Estimated
Equity	**1.575 €**	**1.609 €**	**1.688 €**	**1.936 €**	**2.203 €**
Equity attributable to shareholders	**1.561,59 €**	**1.593,28 €**	**1.669,26 €**	**1.913,52 €**	**2.177,82 €**
Share capital	141 €	141 €	141 €	141 €	141 €
Dividends	0 €	0 €	0 €	0 €	0 €
Translation	-115 €	-129 €	-143 €	-157 €	-171 €
Other reserves	488 €	577 €	375 €	310 €	242 €
Hedge Reserve	815 €	758 €	1.004 €	1.296 €	1.620 €
Profit of the year	233 €	247 €	292 €	324 €	346 €
Equity attributable to shareholders	**13,00 €**	**16,00 €**	**19,00 €**	**22,00 €**	**25,00 €**
Liabilities	**1.935 €**	**2.072 €**	**2.130 €**	**2.003 €**	**1.897 €**
Non-current liabilities	**568 €**	**531 €**	**494 €**	**475 €**	**475 €**
Long-term debts	473 €	437 €	401 €	383 €	383 €
Post-employment benefit obligations	68 €	68 €	68 €	68 €	68 €
Provisions	25 €	24 €	23 €	22 €	22 €
Derivative financial instruments	0 €	0 €	0 €	0 €	0 €
Deferred tax liability	0 €	0 €	0 €	0 €	0 €
Other long term liabilities	2 €	2 €	2 €	2 €	2 €
Current liabilities	**1.367 €**	**1.541 €**	**1.636 €**	**1.528 €**	**1.422 €**
Current portion of long-term debt	191 €	202 €	209 €	214 €	228 €
Short-term debt	37 €	37 €	37 €	19 €	1 €
Trade payables	413 €	403 €	397 €	393 €	391 €
Provisions	400 €	563 €	649 €	553 €	450 €
Advances received	214 €	217 €	219 €	220 €	221 €
Billing in excess of cost and earnings of projects under constructi	112 €	120 €	125 €	129 €	131 €
Derivative financial instruments	0 €	0 €	0 €	0 €	0 €
Income tax liabilities	64 €	66 €	67 €	68 €	81 €
Other payables	338 €	393 €	433 €	463 €	487 €
Total Shareholders' equity and liabilities	**3.510 €**	**3.681 €**	**3.818 €**	**3.938 €**	**4.100 €**

Table 31. Future Current Assets Structure in millions of euros (2019-2023)

	2018	2019	2020	2021	2022	2023
Inventories	**950 €**	**1.013 €**	**1.051 €**	**1.075 €**	**1.092 €**	**1.105 €**
Materials and supplies	*160 €*	*174,38 €*	*183,08 €*	*188,80 €*	*192,80 €*	*195,76 €*
Work in process	*209*	*227,26 €*	*238,29 €*	*245,52 €*	*250,58 €*	*254,32 €*
Finished products	*581 €*	*611,56 €*	*629,43 €*	*640,93 €*	*648,89 €*	*654,71 €*
Receivables	**811 €**	**820 €**	**837 €**	**848 €**	**856 €**	**862 €**
Trade and other receivables	*623 €*	*651 €*	*667 €*	*678 €*	*685 €*	*691 €*
Customer contract assets	*84 €*	*82 €*	*80 €*	*80 €*	*79 €*	*79 €*
Loans and other interest-bearing receivables	*1 €*	*1 €*	*1 €*	*1 €*	*1 €*	*1 €*
Derivative Financial instruments	*83 €*	*87 €*	*89 €*	*90 €*	*91 €*	*92 €*
Liquid funds	**450 €**	**462 €**	**473 €**	**483 €**	**493 €**	**515 €**
Cash and Cash equivalents	356 €	368 €	379 €	389 €	399 €	421 €
Fund investments	*27 €*	*27 €*	*27 €*	*27 €*	*27 €*	*27 €*
Deposits and securities, maturity three months	*40 €*	*40 €*	*40 €*	*40 €*	*40 €*	*40 €*
Cash on hand and bank accounts	*289 €*	*301 €*	*312 €*	*322 €*	*332 €*	*354 €*
Deposits and securities, maturity more than three months	94 €	94 €	94 €	94 €	94 €	94 €

Hypothesis

Non-Current assets	2016 Real	2017 Real	2018 Real	2019 Est	2020 Est	2021 Est	2022 Est	2023 Est
Intagible assets	**640 €**	**663 €**	**749 €**	**774 €**	**787 €**	**800 €**	**812 €**	**825 €**
Goodwill	452 €	466 €	525 €	526 €	527 €	528 €	529 €	531 €
Adquisitions cost at beginning of year	452 €	452 €	452 €	452 €	452 €	452 €	452 €	452 €
Translation differences	0 €	-5 €	52 €	52 €	52 €	52 €	52 €	52 €
Business adquisitions	0 €	19 €	20 €	21 €	22 €	23 €	24 €	26 €
% Annual Growth		*100%*	*5%*	*5%*	*5%*	*5%*	*5%*	*5%*
Reclassifications	0 €	0 €	1 €	1 €	1 €	1 €	1 €	1 €
Capital expenditure	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Other intagible assets	188 €	197 €	224 €	248 €	260 €	271 €	283 €	294 €
Patents and licences	7 €	14 €	24 €	28 €	30 €	32 €	33 €	34 €
Adquisitions cost at beginning of year	10 €	12 €	23 €	27 €	29 €	31 €	32 €	33 €
% Annual Growth		*16,6%*	*47,8%*	*16,1%*	*8,9%*	*5,6%*	*3,8%*	*2,7%*
Translation differences	0 €	-2 €	0 €	0 €	0 €	0 €	0 €	0 €
Business adquisitions	0 €	2 €		0 €	0 €	0 €	0 €	0 €
Reclassifications	0 €	2 €	1 €	1 €	1 €	1 €	1 €	1 €
Capital expenditure	2 €	0 €		0 €	0 €	0 €	0 €	0 €

Other changes	-5 €	-1 €	3 €	1 €	1 €	0 €	0 €	0 €
% Annual Growth		*-400%*	*133%*	*-66,6%*	*-37,4%*	*-23,5%*	*-15,4%*	*-11,3%*
Capitalized software	72 €	76 €	82 €	87 €	92 €	97 €	102 €	108 €
Adquisitions cost at beginning of year	71 €	77 €	80 €	85 €	90 €	95 €	100 €	106 €
% Annual Growth		*7,7%*	*3,7%*	*6%*	*6%*	*6%*	*6%*	*6%*
Translation differences		-2 €		0 €	0 €	0 €	0 €	0 €
Reclassifications	1 €		1 €	1 €	1 €	1 €	1 €	1 €
Capital expenditure	1 €	1 €	1 €	1 €	1 €	1 €	1 €	1 €
Other changes	-1 €		-2 €	-2 €	-2 €	-2 €	-2 €	-2 €
Other intangible assets	109 €	107 €	118 €	134 €	138 €	143 €	148 €	152 €
Adquisitions cost at beginning of year	110 €	106 €	108 €	119 €	119 €	119 €	119 €	119 €
Translation differences	0 €	-5 €	1 €	3 €	5 €	9 €	12 €	16 €
% Annual Growth		*100%*	*600%*	*175%*	*97,22%*	*60%*	*41,3%*	*29,8%*
Business adquisitions		5 €	8 €	11 €	13 €	14 €	15 €	16 €
% Annual Growth		*100%*	*37%*	*34,8%*	*19,10%*	*11,4%*	*8,12%*	*5,86%*
Reclassifications		2 €	2 €	2 €	2 €	2 €	2 €	2 €
Capital expenditure	2 €	-1 €	-1 €	-1 €	-1 €	-1 €	-1 €	-1 €

Tangible assets	**870 €**	**810 €**	**815 €**	**823 €**	**840 €**	**852 €**	**864 €**	**877 €**
Land and water areas	49 €	38 €	38 €	37 €	36 €	36 €	36 €	36 €
Adquisitions cost at beginning of year	*49 €*	*40 €*	*42 €*	40 €	39 €	39 €	38 €	38 €
% Annual Growth		*-22%*	*4,76%*	*-4,43%*	*-2,46%*	*-1,54%*	*-1,05%*	*-0,76%*
Translation differences	*2 €*	*-2 €*	*-2 €*	*-2 €*	*-2 €*	*-2 €*	*-2 €*	*-2 €*
Business adquisitions	*2 €*	*0 €*	*1 €*	1 €	1 €	1 €	1 €	1 €
Other changes	-4 €	0 €	-3 €	-2,5	-2 €	-2 €	-1 €	-1 €
Buildings and Structures	245 €	215 €	217 €	212 €	216 €	218 €	220 €	221 €
Adquisitions cost at beginning of year	255 €	225 €	229 €	222 €	226 €	228 €	229 €	230 €
% Annual Growth		*-13%*	*1,75%*	*2,90%*	*1,45%*	*0,91%*	*0,63%*	*0,48%*
Translation differences	5 €	-1 €	-2 €	-2 €	-2 €	-2 €	-2 €	-2 €
Business adquisitions	0 €	0 €	1 €	1 €	1 €	1 €	1 €	1 €
Capital expenditure	2 €	1 €	1 €	1 €	1 €	1 €	1 €	1 €
Other changes	-17 €	-10 €	-12 €	-10 €	-10 €	-9 €	-9 €	-9 €
% Annual Growth		*-70%*	*16%*	*-13%*	*-7,41%*	*-4,63%*	*-3,15%*	*-2,27%*
Machiniery and equipment	568 €	545 €	529 €	537 €	543 €	544 €	545 €	546 €
Adquisitions cost at beginning of year	560 €	572 €	541 €	546 €	548 €	550 €	551 €	552 €
% Annual Growth		*2,10%*	*-5,7%*	*0,91%*	*0,45%*	*0,28%*	*0,20%*	*0,15%*
Translation differences	20 €	-34 €	-20 €	-24 €	-27 €	-30 €	-31 €	-32 €
% Annual Growth		*158%*	*-70%*	*22,2%*	*12,34%*	*7,71%*	*5,24%*	*3,79%*
Business adquisitions		2 €	2 €	3 €	3 €	3 €	3 €	3 €
% Annual Growth		*100%*	*0,00%*	*25%*	*13,89%*	*8,68%*	*5,90%*	*4,26%*
Capital expenditure	16 €	16 €	24 €	26 €	27 €	28 €	29 €	29 €
% Annual Growth		*0,00%*	*33,3%*	*8,33%*	*4,63%*	*2,89%*	*1,97%*	*1,42%*
Other changes	-38 €	-12 €	-20 €	-11 €	-8 €	-7 €	-6 €	-6 €
% Annual Growth		*-216%*	*40%*	*-44,1%*	*-24,54%*	*-15,3%*	*-10,4%*	*-7,53%*
Assets under construction	8 €	12 €	31 €	38 €	45 €	53 €	63 €	75 €
Adquisitions cost at beginning of year	*10 €*	*8 €*	*10 €*	*10,13 €*	*10,19 €*	*10,23 €*	*10,26 €*	*10,28 €*

% Annual Growth		*-25%*	*20%*	*1,25%*	*0,63%*	*0,39%*	*0,27%*	*0,21%*
Translation differences	*1 €*	*1 €*	*-1 €*	*-1,00 €*	*-1,00 €*	*-1,00 €*	*-1,00 €*	*-1,00 €*
Business adquisitions	*0 €*	*0 €*	*0 €*	*0,00 €*	*0,00 €*	*0,00 €*	*0,00 €*	*0,00 €*
Capital expenditure	*9 €*	*11 €*	*32 €*	*37,82 €*	*44,69 €*	*52,82 €*	*62,42 €*	*73,77 €*
Reclassifications	-12 €	-8 €	-10 €	*-9,25 €*	*-8,86 €*	*-8,63 €*	*-8,48 €*	*-8,37 €*
% Annual Growth		*-50%*	*20%*	*-7,50%*	*-4,17%*	*-2,60%*	*-1,77%*	*-1,28%*
Other non-current assets	**109 €**	**109 €**	**155 €**	**174 €**	**198 €**	**228 €**	**268 €**	**319 €**
Investments in associated companies	0 €	1 €	4 €	5 €	6 €	8 €	9 €	10 €
Adquisitions cost at beginning of year		2 €	2 €	3,20 €	4,40 €	5,60 €	6,80 €	8,00 €
Equity adjustments as of January 1			4 €	4,00 €	4,00 €	4,00 €	4,00 €	4,00 €
Translation differences		-1 €	-2 €	-2 €	-2 €	-2 €	-2 €	-2 €
Non-current financial assets		8 €	12 €	15 €	19 €	24 €	30 €	38 €
% Annual Growth		*100%*	*33,33%*	*33,33%*	*18,52%*	*11,57%*	*7,87%*	*5,68%*
Deferred tax assets	88 €	75 €	101 €	103 €	104 €	105 €	106 €	106 €
% Annual Growth		*-17%*	*25,74%*	*2,10%*	*1,17%*	*0,73%*	*0,50%*	*0,36%*
Other non-current assets	21 €	25 €	38 €	51 €	68 €	92 €	123 €	165 €
% Annual Growth		*16%*	*34,21%*	*12,55%*	*6,97%*	*4,36%*	*2,96%*	*2,14%*

Current Assets	**2016 Real**	**2017 Real**	**2018 Real**	**2019 Est**	**2020 Est**	**2021 Est**	**2022 Est**	**2023 Est**
Inventories	**709 €**	**750 €**	**950 €**	**1.013 €**	**1.051 €**	**1.075 €**	**1.092 €**	**1.105 €**
Materials and supplies	107 €	121 €	160 €	*174,38 €*	*183,08 €*	*188,80 €*	*192,80 €*	*195,76 €*
% Annual Growth		*11,5%*	*24,38%*	*8,99%*	*4,99%*	*3,12%*	*2,12%*	*1,53%*
Work in process	142 €	164 €	209	*227,26 €*	*238,29 €*	*245,52 €*	*250,58 €*	*254,32 €*
% Annual Growth		*13,4%*	*21,53%*	*8,74%*	*4,85%*	*3,03%*	*2,06%*	*1,49%*
Finished products	460 €	465 €	581 €	*611,56 €*	*629,43 €*	*640,93 €*	*648,89 €*	*654,71 €*
% Annual Growth		*1,08%*	*19,97%*	*5,26%*	*2,92%*	*1,83%*	*1,24%*	*0,90%*
Receivables	**717 €**	**748 €**	**811 €**	**820 €**	**837 €**	**848 €**	**856 €**	**862 €**
Trade and other receivables	519 €	548 €	623 €	651 €	667 €	678 €	685 €	691 €
Trade receivables, not due at reporting date	352 €	368 €	421 €	*438,83 €*	*449,15 €*	*455,75 €*	*460,31 €*	*463,63 €*
% Annual Growth		*4,35%*	*12,59%*	*4,23%*	*2,35%*	*1,47%*	*1,00%*	*0,72%*
Trade receivables 1–30 days past due	79 €	84 €	91 €	*94,10 €*	*95,89 €*	*97,02 €*	*97,80 €*	*98,37 €*
% Annual Growth		*5,95%*	*7,69%*	*3,41%*	*1,90%*	*1,18%*	*0,81%*	*0,58%*
Trade receivables 31–60 days past due	39 €	47 €	56 €	*60,63 €*	*63,42 €*	*65,24 €*	*66,52 €*	*67,45 €*
% Annual Growth		*17,02%*	*16,07%*	*8,27%*	*4,60%*	*2,87%*	*1,95%*	*1,41%*
Trade receivables 61–90 days past due	16 €	16 €	16 €	*16,32 €*	*16,65 €*	*16,98 €*	*17,32 €*	*17,67 €*
% Annual Growth		*0,00%*	*0,00%*	*2,00%*	*2,00%*	*2,00%*	*2,00%*	*2,00%*
Trade receivables 91–180 days past due	18 €	14 €	14 €	*13,00 €*	*12,48 €*	*12,17 €*	*11,97 €*	*11,82 €*
% Annual Growth		*-28%*	*0,00%*	*-7,14%*	*-3,97%*	*-2,48%*	*-1,69%*	*-1,22%*
Trade receivables more than 180 days past due	15 €	19 €	25 €	*27,82 €*	*29,56 €*	*30,71 €*	*31,53 €*	*32,13 €*
% Annual Growth		*21%*	*24,00%*	*11,26%*	*6,26%*	*3,91%*	*2,66%*	*1,92%*
Customer contract assets	93 €	81 €	84 €	82 €	80 €	80 €	79 €	79 €
		-14%	*3,57%*	*-2,81%*	*-1,56%*	*-0,98%*	*-0,66%*	*-0,48%*
Loans and other interest bearing receivable	16 €	0 €	1 €	1 €	1 €	1 €	1 €	1 €
Derivative Financial instruments	69 €	81 €	83 €	87 €	89 €	90 €	91 €	92 €

		14,8%	*2,41%*	*4,31%*	*2,39%*	*1,50%*	*1,02%*	*0,73%*
Income tax receivables	20 €	38 €	20 €					
Liquid funds	**807 €**	**826 €**	**450 €**	**515 €**	**586 €**	**665 €**	**726 €**	**813 €**
Cash and Casg equivalents	698 €	519 €	356 €	421 €	492 €	571 €	632 €	719 €
Fund investments		58 €	27 €	27 €	27 €	27 €	27 €	27 €
Deposits and securities, maturity three months or less	295 €	100 €	40 €	40 €	40 €	40 €	40 €	40 €
Provisions				0 €	0 €	0 €	0 €	0 €
Provisions (control)				53 €	113 €	182 €	233 €	298 €
Cash on hand and bank accounts	403 €	361 €	289 €	301 €	312 €	322 €	332 €	354 €
Sales	*2.586 €*	*2.705€*	*3.173 €*	*3.432 €*	*3.672 €*	*3.920 €*	*4.180 €*	*4.456 €*
Cash on hand and bank accounts days				*32*	*31*	*30*	*29*	*29*
Deposits and securities, maturity more than three months	109 €	307 €	94 €	94 €	94 €	94 €	94 €	94 €

NOF	**2016 Real**	**2017 Real**	**2018 Real**	**2019 Est**	**2020 Est**	**2021 Est**	**2022 Est**	**2023 Est**
Inventories	709 €	750 €	950 €	1.013 €	1.051 €	1.075 €	1.092 €	1.105 €
% Annual Growth		6%	27%	7%	4%	2%	2%	1%
Receivables	717 €	748 €	811 €	820 €	837 €	848 €	856 €	862 €
Operative Cash and Cash Equivalents	698 €	519 €	356 €	421 €	492 €	571 €	632 €	719 €
Current Assets	2.124 €	2.017 €	2.117 €	2.254 €	2.380 €	2.495 €	2.581 €	2.686 €
Trade and other payables	470 €	342 €	431 €	413 €	403 €	397 €	393 €	391 €
Short-term debts	1 €	0 €	1 €	1 €	1 €	1 €	1 €	1 €
Current Liabilities	471 €	342 €	432 €	414 €	404 €	398 €	394 €	392 €
%		-27,38%	26,31%	-4,185%	-2,325%	-1,453%	-0,988%	-0,713%
NOF	1.653 €	1.675 €	1.685 €	1.840 €	1.975 €	2.097 €	2.187 €	2.294 €
NOF Variation		22 €	10 €	155 €	136 €	121 €	90 €	108 €
NOF Variation	0 €	22 €	10 €	155 €	136 €	121 €	90 €	108 €
Operative Revenues	2.586 €	2.705 €	3.173 €	3.432 €	3.672 €	3.920 €	4.180 €	4.456 €
Annual Growth		119 €	468 €	259 €	240 €	248 €	260 €	276 €
Annual Growth (%)		4,60%	17,30%	8,15%	7,00%	6,75%	6,63%	6,60%
NOF Variation / Annual Increase		-18,49%	-2,14%	-59,82%	-56,52%	-48,84%	-34,61%	-39,07%

Amortization	**2016 Real**	**2017 Real**	**2018 Real**	**2019 Est**	**2020 Est**	**2021 Est**	**2022 Est**	**2023 Est**
Other intangible assets	**127 €**	**140 €**	**167 €**	**164 €**	**137 €**	**118 €**	**97 €**	**78 €**
Starting Other intangible assets	**188 €**	**197 €**	**224 €**	**248 €**	**260 €**	**271 €**	**283 €**	**294 €**
Investment	0 €	9 €	27 €	24 €	12 €	12 €	11 €	11 €
Sale								
Final Other intangible assets	**188 €**	**206 €**	**251 €**	**272 €**	**272 €**	**283 €**	**294 €**	**305 €**
Starting Accumulative Amortization		-61 €	-66 €	-84 €	-108 €	-135 €	-165 €	-197 €
Endowment Fund - Amortization	-18 €	-18 €	-18 €	-24 €	-27 €	-30 €	-33 €	-30 €
% Endowment over assets	-9,57%	-9,13%	-8,03%	-9,66%	-10,37%	-11%	-11%	-10,05%
Endowment existing Other intangible assets	-18 €	-18 €	-18 €	-18 €	-18 €	-18 €	-18 €	-18 €
% Projected Other intangible assets Amortization	25%	25%	25%	25%	25%	25%	25%	25%

Endowment Other intangible assets New Investment	0 €	0 €	0 €	-6 €	-9 €	-12 €	-15 €	-12 €
Endowment Other intangible assets 2019				-6 €	-6 €	-6 €	-6 €	0 €
Endowment Other intangible assets 2020					-3 €	-3 €	-3 €	-3 €
Endowment Other intangible assets 2021						-3 €	-3 €	-3 €
Endowment Other intangible assets 2022							-3 €	-3 €
Endowment Other intangible assets 2023								-3 €
Accumulative Amortization - Other intangible assets	**-61 €**	**-66 €**	**-84 €**	**-108 €**	**-135 €**	**-165 €**	**-197 €**	**-227 €**
Buildings and Structures	**113 €**	**54 €**	**80 €**	**59 €**	**64 €**	**55 €**	**46 €**	**36 €**
Starting Buildings and Structures	**245 €**	**215 €**	**217 €**	**212 €**	**216 €**	**218 €**	**220 €**	**221 €**
Investment	0 €	0 €	2 €	0 €	4 €	2 €	2 €	1 €
Sale		-30 €	0 €	-5 €	0 €	0 €	0 €	0 €
Final Buildings and Structures	**245 €**	**185 €**	**219 €**	**206 €**	**219 €**	**220 €**	**221 €**	**222 €**
Starting Accumulative Amortization		-132 €	-131 €	-139 €	-147 €	-156 €	-166 €	-176 €
Endowment Fund - Amortization	0 €	-9 €	-8 €	-8 €	-9 €	-10 €	-10 €	-10 €
% Endowment over assets	0,000%	-4,18%	-3,68%	-3,77%	-4,16%	-4,39%	-4,55%	-4,67%
Endowment existing Buildings and Structures		-9 €	-8 €	-8 €	-8 €	-8 €	-8 €	-8 €
% Projected Buildings and Structures Amortization	25%	25%	25%	25%	25%	25%	25%	25%
Endowment Buildings and Structures New Investment	0 €	0 €	0 €	0 €	-1 €	-2 €	-2 €	-2 €
Endowment Buildings and Structures 2019				0 €	0 €	0 €	0 €	0 €
Endowment Buildings and Structures 2020					-1 €	-1 €	-1 €	-1 €
Endowment Buildings and Structures 2021						-1 €	-1 €	-1 €
Endowment Buildings and Structures 2022							-0 €	-0 €
Endowment Buildings and Structures 2023								-0 €
Accumulative Amortization - Buildings and Structures	**-132 €**	**-131 €**	**-139 €**	**-147 €**	**-156 €**	**-166 €**	**-176 €**	**-186 €**
Machinery and equipment	**145 €**	**100 €**	**85 €**	**82 €**	**137 €**	**73 €**	**65 €**	**76 €**
Starting Machinery and equipment	**568 €**	**545 €**	**529 €**	**537 €**	**591 €**	**604 €**	**629 €**	**673 €**
Investment	0 €	0 €	0 €	8 €	55 €	13 €	24 €	44 €
Sale		-23 €	-16 €	0 €	0 €	0 €	0 €	0 €
Final Machinery and equipment	**568 €**	**522 €**	**513 €**	**544 €**	**646 €**	**618 €**	**653 €**	**717 €**
Starting Accumulative Amortization		-423 €	-422 €	-428 €	-462 €	-509 €	-545 €	-588 €
Endowment Fund - Amortization	0 €	-33 €	-32 €	-34 €	-48 €	-35 €	-43 €	-52 €
% Endowment over assets	0%	-6,05%	-6,04%	-6,31%	-8,04%	-5,86%	-6,87%	-7,78%
Endowment existing Machinery and equipment		-33 €	-32 €	-32 €	-32 €	-32 €	-32 €	-32 €
% Projected Machinery and equipment Amortization	25%	25%	25%	25%	25%	25%	25%	25%
Endowment Machinery and equipment New Investment	0 €	0 €	0 €	-2 €	-16 €	-3 €	-11 €	-20 €
Endowment Machinery and equipment 2019				-2 €	-2 €	-2 €	-2 €	0 €
Endowment Machinery and equipment 2020					-14 €	2 €	0 €	0 €
Endowment Machinery and equipment 2021						-3 €	-3 €	-3 €
Endowment Machinery and equipment 2022							-6 €	-6 €
Endowment Machinery and equipment 2023								-11 €
Accumulative Amortization - Machinery and equipment	**-423 €**	**-422 €**	**-428 €**	**-462 €**	**-509 €**	**-545 €**	**-588 €**	**-641 €**

Equity	2016	2017	2018	2019	2020	2021	2022	2023
	Real	Real	Real	Est	Est	Est	Est	Est
Equity attributable to shareholders	**1.401 €**	**980 €**	**1.087 €**	**1.272 €**	**1.452 €**	**1.669 €**	**1.914 €**	**2.191 €**
Share capital	141 €	141 €	141 €	141 €	141 €	141 €	141 €	141 €
Dividends	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Translation	-48 €	-87 €	-101 €	-115 €	-129 €	-143 €	-157 €	-171 €
Other reserves	878 €	520 €	522 €	488 €	436 €	375 €	310 €	242 €
Hedge Reserve	303 €	302 €	302 €	525 €	758 €	1.004 €	1.296 €	1.620 €
Profit of the year	127 €	104 €	223 €	233 €	247 €	292 €	324 €	359 €
Equity attributable to shareholders	**8 €**	**7 €**	**10 €**	**13 €**	**16 €**	**19 €**	**22 €**	**25 €**

Liabilities	2016	2017	2018	2019	2020	2021	2022	2023
	Real	Real	Real	Est	Est	Est	Est	Est
Non-current liabilities	**908 €**	**1.003 €**	**766 €**	**568 €**	**531 €**	**494 €**	**475 €**	**475 €**
Long-term debts	757 €	878 €	635 €	473 €	437 €	401 €	383 €	383 €
Loans from financial institutions	*198 €*	*162 €*	*126 €*	*90 €*	*54 €*	*18 €*	*0 €*	*0 €*
Public bonds	*198 €*	*162 €*	*126 €*	*90 €*	*54 €*	*18 €*		
Bonds	*559 €*	*554 €*	*383 €*	*383 €*	*383 €*	*383 €*	*383 €*	*383 €*
Post-employment benefit obligations	**88 €**	**68 €**	**68 €**	**68 €**	**68 €**	**68 €**	**68 €**	**68 €**
Provisions	**45 €**	**37 €**	**29 €**	**25 €**	**24 €**	**23 €**	**22 €**	**22 €**
Other provisions	45 €	37 €	29 €	25 €	24 €	23 €	22 €	22 €
% Annual Growth		*-21,62%*	*-27,59%*	*-12,30%*	*-6,83%*	*-4,27%*	*-2,90%*	*-2,10%*
Deferred tax liability	**11 €**	**18 €**	**30 €**					
Other long term liabilities	**2 €**	**2 €**	**2 €**	**2 €**	**2 €**	**2 €**	**2 €**	**2 €**
Current liabilities	**919 €**	**1.297€**	**1.416€**	**1.769 €**	**2.000 €**	**2.137 €**	**2.059 €**	**1.967 €**
Current portion of long-term debt	0 €	279 €	174 €	191 €	202 €	209 €	214 €	217 €
% Annual Growth		*100%*	*-60%*	*9,91%*	*5,51%*	*3,44%*	*2,34%*	*1,69%*
Short-term debt	28 €	21 €	42 €	37 €	37 €	37 €	19 €	1 €
Repayments	27 €	21 €	41 €	36 €	36 €	36 €	18 €	0 €
Interests	1 €		1 €	1 €	1 €	1 €	1 €	1 €
% Annual Growth		*-28%*	*50%*	*5,36%*	*2,98%*	*1,86%*	*1,26%*	*0,91%*
Trade payables	470 €	342 €	431 €	413 €	403 €	397 €	393 €	391 €
% Annual Growth		*-37%*	*20%*	*-4,19%*	*-2,33%*	*-1,46%*	*-0,99%*	*-0,72%*
Provisions	115 €	112 €	138 €	400 €	563 €	649 €	553 €	450 €
Warranty and guarantee provision	39 €	48 €	50 €	53 €	55 €	56 €	56 €	57 €
% Annual Growth		*18,7%*	*4%*	*5,69%*	*3,16%*	*1,97%*	*1,34%*	*0,97%*
Restructuring provision	28 €	11 €	5 €					
Environmental remedial provision	1 €	1 €	1 €					
Other provisions	16 €	14 €	15 €	15 €	15 €	14 €	14 €	14 €
% Annual Growth		*-14%*	*6,67%*	*-1,90%*	*-1,06%*	*-0,66%*	*-0,45%*	*-0,32%*
Company provisions	31 €	38 €	67 €	332 €	494 €	579 €	482 €	379 €
Advances received	186 €	198 €	208 €	214 €	217 €	219 €	220 €	221 €
% Annual Growth		*6,06%*	*4,81%*	*2,72%*	*1,51%*	*0,94%*	*0,64%*	*0,46%*
Billing in excess of cost and earnings of projects under construction	54 €	58 €	100 €	112 €	120 €	125 €	129 €	131 €

% Annual Growth		*6,90%*	*42%*	*12,2%*	*6,79%*	*4,24%*	*2,89%*	*2,08%*
Income tax liabilities	45 €	70 €	61 €	64 €	66 €	67 €	68 €	69 €
% Annual Growth		*35,7%*	*-14%*	*5,24%*	*2,91%*	*1,82%*	*1,24%*	*0,89%*
Other payables	0 €	217 €	262 €	338 €	393 €	433 €	463 €	487 €
Accrued interests		7 €	5 €	5 €	5 €	5 €	5 €	5 €
Accrued personnel costs		85 €	105 €	136 €	159 €	175 €	187 €	197 €
% Annual Growth		*100%*	*19%*	*29,7%*	*16,53%*	*10,3%*	*7,03%*	*5,08%*
Accrued project costs		30 €	54 €	74 €	88 €	99 €	108 €	114 €
% Annual Growth		*100%*	*44,4%*	*36,1%*	*20,06%*	*12,5%*	*8,53%*	*6,16%*
VAT, payroll tax and social charge payables		34 €	39 €	50 €	58 €	63 €	68 €	71 €
% Annual Growth		*100%*	*12%*	*28%*	*15,67%*	*9,79%*	*6,66%*	*4,81%*
Derivative instruments		10 €	14 €	19 €	22 €	24 €	26 €	28 €
% Annual Growth		*100%*	*28%*	*32%*	*17,86%*	*11,1%*	*7,59%*	*5,48%*
Other payables		51 €	45 €	55 €	61 €	66 €	69 €	72 €
% Annual Growth		*100%*	*-13%*	*21,7%*	*12,04%*	*7,52%*	*5,12%*	*3,69%*

Appendix 8. Income Of Statement Forecast And Hypothesis

	2019	2020	2021	2022	2023
Sales	3431,7	3671,9	3919,7	4179,7	4439,4
Minerals	2662,0	2875,7	3099,5	3337,3	3575,9
Annual increase	*9%*	*8%*	*8%*	*8%*	*7%*
Finland PIB	*2%*	*3%*	*3%*	*3%*	*2%*
Mining	440,7	297,6	218,1	169,6	137,2
% Minerals	*17%*	*10%*	*7%*	*5%*	*4%*
Aggregates	425,9	268,4	250,7	240,0	232,6
% Minerals	*16%*	*9%*	*8%*	*7%*	*7%*
Reclycing	159,7	172,5	186,0	200,2	214,6
% Minerals	*6%*	*6%*	*6%*	*6%*	*6%*
Flow Control	769,7	796,2	820,2	842,5	863,5
Annual increase	*7%*	*3%*	*3%*	*3%*	*2%*
Oil and gas	200,1	120,8	80,9	58,1	44,0
% Flow control	*26%*	*15%*	*10%*	*7%*	*5%*
Pulp and paper	133,4	138,0	142,2	146,0	149,7
% Flow control	*17%*	*17%*	*17%*	*17%*	*17%*
Mining (including pumps)	130,8	135,4	139,4	143,2	146,8
% Flow control	*17%*	*17%*	*17%*	*17%*	*17%*
Power and other process industries	107,8	111,5	114,8	117,9	120,9
% Flow control	*14%*	*14%*	*14%*	*14%*	*14%*
Cost of goods sold	-2487,0	-2661,5	-2794,9	-2942,2	-3083,8
Annual increase	*10%*	*7%*	*5%*	*5%*	*5%*
% over sales	*72%*	*72%*	*71%*	*70%*	*69%*
Personnel expenses	-1464,2	-1513,3	-1545,0	-1567,0	-1583,2
Salaries and wages	-709,6	-734,1	-750,0	-761,0	-769,1
Number of personnel	13776,3	14435,6	15129,7	15416,3	16088,1
Unit Value	51507,8	50855,3	49571,2	49364,8	47805,4

Board remuneration	-709,6	-734,1	-750,0	-761,0	-769,1
	6%	3%	2%	1%	1%
Pension costs, defined contribution plans	-34,0	-34,0	-34,0	-34,0	-34,0
Pension costs, defined benefit plans	-6,0	-6,0	-6,0	-6,0	-6,0
Other post-employment benefits	-2,0	-2,0	-2,0	-2,0	-2,0
Share-based payments	-3,0	-3,0	-3,0	-3,0	-3,0
Other indirect employee costs					
Other costs of goods solds	-957,0	-1064,7	-1175,0	-1289,2	-1408,4
	13%	11%	10%	10%	9%
Depreciation and amortization	-65,8	-83,5	-74,9	-85,9	-92,2
1) Number of personnel at end of year					
Minerals	10090,5	10593,9	11122,4	11233,4	11719,1
% Annual Growth	5%	5%	5%	1%	4%
Flow Control	3216,5	3387,6	3567,9	3757,7	3957,6
% Annual Growth	5%	5%	5%	5%	5%
Group Head Office and others total	469,3	454,1	439,4	425,2	411,4
% Annual Growth	-3%	-3%	-3%	-3%	-3%
	13776,3	14435,6	15129,7	15416,3	16088,1
2) Salaries and wages	1419,2	1468,3	1500,0	1522,0	1538,2
3) Unit Value (salary)	103015,7	101710,6	99142,5	98729,6	95610,9
	13776,3	14435,6	15129,7	15416,3	16088,1
	51507,8	50855,3	49571,2	49364,8	47805,4
Selling, general and administrative expenses	-562,7	-580,3	-598,7	-617,9	-637,7
Marketing and selling expenses	-296	-301,0	-306,3	-311,8	-317,6
% Annual Growth	1%	2%	2%	2%	2%
Research and development expenses	-42,2	-45,1	-48,2	-51,4	-54,6
% Annual Growth	8%	7%	7%	7%	6%
Administrative expenses	-224,5	-234,2	-244,3	-254,7	-265,5
% Annual Growth	4%	4%	4%	4%	4%
Other operating income, net	83,8	96,4	112,0	131,3	155,1
Gain on sale of fixed assets	3,0	4,5	6,8	10,1	15,2
% Annual Growth	50%	50%	50%	50%	50%
Rental income	1,0	1,0	1,0	1,0	1,0
Foreign exchange gains	76,5	88,7	102,9	119,3	138,3
% Annual Growth	16%	16%	16%	16%	16%
Other income	3,3	2,2	1,4	0,9	0,6
% Annual Growth	-34%	-34%	-34%	-34%	-34%
Other operating expenses, total	-112,7	-139,3	-174,0	-218,6	-275,5
Impairment on fixed assets	-0,3	-0,1	0,0	0,0	0,0
% Annual Growth	-67%	-67%	-67%	-67%	-67%
Foreign exchange losses	-106,4	-134,7	-170,6	-216,0	-273,6
% Annual Growth	27%	27%	27%	27%	27%
Other expenses	-6,0	-4,5	-3,4	-2,5	-1,9
% Annual Growth	-25%	-25%	-25%	-25%	-25%
Share in profits and losses of associated companies	0,0	0,0	0,0	0,0	0,0

Financial income	6,1	6,1	6,2	6,3	6,4
Dividends received	0,0	0,0	0,0	0,0	0,0
Interest income on cash and cash equivalents	4,1	4,1	4,2	4,3	4,4
Interest on cash and cash equivalents	1%	2%	2%	2%	3%
Cash and cash equivalents	420,5	491,8	571,3	632,4	717,6
Other financial income	1,0	1,0	1,0	1,0	1,0
Gain from foreign exchange	1,0	1,0	1,0	1,0	1,0
Financial expenses	-35,0	-35,0	-35,0	-35,0	-35,0
Interest expenses from financial debt at amortized cost	-25,0	-25,0	-25,0	-25,0	-25,0
Other financial interests	-25,0	-25,0	-25,0	-25,0	-25,0
Other financial expenses	-10,0	-10,0	-10,0	-10,0	-10,0
Income taxes	-91,6	-111,5	-143,4	-180,0	-222,9
Profit before taxes	324,1	358,2	435,4	503,7	568,9
Income tax at Finnish statutory tax rate of 20%	-64,8	-71,6	-87,1	-100,7	-113,8
Effect of different tax rates in foreign subsidiaries	-37,9	-51,8	-68,1	-91,3	-121,3
Non-deductible expenses	-5,8	-5,1	-5,2	-4,9	-4,8
Tax exempt income or tax incentives	29,0	29,0	29,0	29,0	29,0
	93%	90%	92%	91%	91%
Foreign non-creditable withholding taxes	0,0	0,0	0,0	0,0	0,0
Deferred tax liability on undistributed earnings	-8,0	-8,0	-8,0	-8,0	-8,0
Effect of enacted change in tax rates	3,0	3,0	3,0	3,0	3,0
Income tax for prior years	-2,0	-2,0	-2,0	-2,0	-2,0
Other	-5,0	-5,0	-5,0	-5,0	-5,0
Dividends paid	-162,7	-167,6	-172,6	-177,8	-183,2
Distribution	70%	68%	59%	55%	53%

Appendix 9. Metso Valuation in DFC Method

	2018(r)	2019(e)	2020(e)	2021(e)	2022(e)	2023(e)
Earnings	3.431,7	3.671,9	3.919,7	4.179,7	4.439,4	4.439,4
Costs	(3.078,6)	(3.284,8)	(3.455,6)	(3.647,3)	(3.841,9)	(3.841,9)
EBITDA	**353,09 €**	**387,10 €**	**464,15 €**	**532,43 €**	**597,49 €**	**597,49 €**
	10%	11%	12%	13%	13%	13%
Depreciation/Depletion	(65,8)	(83,5)	(74,9)	(85,9)	(92,2)	(103,3)
EBIT	**287,24 €**	**303,58 €**	**389,24 €**	**446,49 €**	**505,25 €**	**494,23 €**
Taxes	(21,0)	(30,7)	(27,6)	(34,6)	(40,7)	(45,5)
	31%	36%	36 %	40%	44%	44%
EAIDT	**266,25 €**	**272,90 €**	**361,64 €**	**411,85 €**	**464,56 €**	**448,69 €**
Depreciation/Depletion	65,8	83,5	74,9	85,9	92,2	103,3
FCO	**332,10 €**	**356,41 €**	**436,55 €**	**497,79 €**	**556,80 €**	**551,9**
Net Working Capital Requirement	(154,7)	(135,8)	(121,1)	(90,0)	(106,5)	(106,5)
Capital Expenditure	(64,6)	(72,5)	(81,4)	(91,5)	(103,3)	(103,3)
FCF	**112,81 €**	**148,11 €**	**234,10 €**	**316,26 €**	**347,05 €**	**342,19 €**
						5931

Appendix 10. Maxam's Valuation

Income Statement

	2013	2014	2015	2016	2017
Net Sales	86598,0	78086,0	68327,0	72101,0	80452,0
Growth		*-11%*	*-14%*	*5%*	*2%*
Total Revenue	86598,0	78086,0	68327,0	72101,0	80452,0
Cost of Revenue	-52633,0	-45583,0	-35130,0	-38440,0	-40573,0
Costs/Sales	*61%*	*58%*	*51%*	*53%*	*50%*
Growth					
Gross Profit	33965,0	32503,0	33197,0	33661,0	39879,0
Other costs	-40316,0	-33376,0	-24715,0	-26303,0	-29378,0
Depreciation & Amortization	-5318,0	-5274,0	-4904,0	-4759,0	-5500,0
Other Operating Expense	-5188,0	-5637,0	-328,0	-398,0	-2581,0
EBITDA	-11539,0	-6510,0	8154,0	6960,0	7920,0
EBIT	-16857,0	-11784,0	3250,0	2201,0	2420,0
Unusual Expense (Income)	3795,0	3084,0	13136,0	6364,0	23481,0
Interest Expense - Non-Operating	-9635,0	-15088,0	-10905,0	-10968,0	-10465,0
Net Income Before Taxes	-22697,0	-23788,0	5481,0	-2403,0	15436,0
Provision for Income Taxes	-7031,0	-7368,0	-340,0	-1267,0	2792,0
Taxes					
Net Income After Taxes	**-15666,0**	**-16420,0**	**5821,0**	**-1136,0**	**12644,0**

	2018	2019	2020	2021	2022	2023
Net Sales	82061,0	83702,3	85376,3	87083,8	88825,5	90602,0
Growth	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*
Total Revenue	82061,0	83702,3	85376,3	87083,8	88825,5	90602,0
Cost of Revenue	-45133,6	-46036,2	-46957,0	-47896,1	-48854,0	-49831,1
Costs/Sales	*55%*	*55%*	*55%*	*55%*	*55%*	*55%*
Growth	*0,1*	*0,0*				
Gross Profit	36927,5	37666,0	38419,3	39187,7	39971,5	40770,9
Other costs	-29378,0	-29671,8	-29968,5	-30268,2	-30570,9	-30876,6
Depreciation & Amortization	-5500,0	-5500,0	-5500,0	-5500,0	-5500,0	-5500,0
Other Operating Expense	-2581,0	-2581,0	-2581,0	-2581,0	-2581,0	-2581,0
EBITDA	4968,5	5413,2	5869,8	6338,5	6819,6	7313,3
EBIT	-531,5	-86,8	369,8	838,5	1319,6	1813,3
Unusual Expense (Income)	23481,0	23481,0	23481,0	23481,0	23481,0	23481,0
Interest Expense - Non-Operating	-10465,0	-10465,0	-10465,0	-10465,0	-10465,0	-10465,0
Net Income Before Taxes	12484,5	12929,2	13385,8	13854,5	14335,6	14829,3
Provision for Income Taxes	-3495,7	-3620,2	-3748,0	-3879,3	-4014,0	-4152,2
Taxes	*28%*	*28%*	*28%*	*28%*	*28%*	*28%*
Net Income After Taxes	**8988,8**	**9309,1**	**9637,8**	**9975,3**	**10321,6**	**10677,1**

Balance Sheet
Annual Standardized in Thousands of euros

	2013	2014	2015	2016	2017
Cash and Short Term Investments	18.314,00	14.436,00	10.509,00	8.283,00	8.908,00
cash					
Growth		*-27%*	*-37%*	*-27%*	*7%*
Cash & Equivalents	6.010,00	177,00	318,00	20,00	34,00
Accounts Receivable - Trade, Net	43.247,00	40.815,00	35.092,00	37.053,00	39.754,00
Growth		*-6%*	*-16%*	*5%*	*7%*
Total Inventory	8.226,00	9.368,00	8.247,00	5.522,00	7.930,00
Growth		*12%*	*-14%*	*-49%*	*30%*
Prepaid Expenses	16,00	36,00	59,00	45,00	97,00
Growth		*56%*	*39%*	*-31%*	*54%*
Total Current Assets	75.813,00	64.832,00	54.225,00	50.923,00	56.723,00
Property/Plant/Equipment, Total - Net	42.260,00	43.755,00	44.420,00	38.775,00	39.965,00
Goodwill, Net	3.272,00	3.122,00	3.272,00	3.272,00	3.409,00
Intangibles, Net	1.400,00	1.020,00	701,00	709,00	704,00
Total Intangible Assets, Net (Incl Goodwill)	4.677,00	4.292,00	3.973,00	3.981,00	3.514,00
Total Investments	17.087,00	13.464,00	10.209,00	12.367,00	12.891,00
Investments in Associates, JVs & Unconsolidated Subsidiaries	109.476,00	116.552,00	138.382,00	139.259,00	142.389,00
Growth		*6%*	*16%*	*1%*	*2%*
Total Current Assets	178.172,00	182.205,00	200.957,00	198.363,00	202.872,00
Total Assets	**253.985,00**	**247.037,00**	**255.182,00**	**249.286,00**	**259.595,00**

	2018	2019	2020	2021	2022	2023
Cash and Short Term Investments	8.533,47	8.994,67	10610,41	13542,25	17773,00	23197,95
cash		819,99	1993,92	3377,95	4800,13	6172,22
Growth	*-21%*	*-4%*				
Cash & Equivalents	-	12.188,47	12188,47	12188,47	12188,47	12188,47
Accounts Receivable - Trade, Net	39.551,64	39.350,32	39550,62	39751,94	39954,29	40157,66
Growth	*-3%*	*-1%*	*1%*	*1%*	*1%*	*1%*
Total Inventory	7.889,63	7.849,47	7929,48	8010,30	7928,66	8009,47
Growth	*-5%*	*-1%*	*1%*	*1%*	*-1%*	*1%*
Prepaid Expenses	96,51	96,02	90,40	85,11	90,09	84,82
Growth	*29%*	*6%*	*-6%*	*-6%*	*6%*	*-6%*
Total Current Assets	56.071,25	68.478,95	70369,37	73578,06	77934,50	83638,37
Property/Plant/Equipment, Total - Net	39.965,00	39.965,00	39965,00	39965,00	39965,00	39965,00
Goodwill, Net	3.409,00	3.409,00	3409,00	3409,00	3409,00	3409,00
Intangibles, Net	704,00	704,00	704,00	704,00	704,00	704,00
Total Intangible Assets, Net (Incl Goodwill)	3.514,00	3.514,00	3514,00	3514,00	3514,00	3514,00
Total Investments	12.891,00	12.891,00	12891,00	12891,00	12891,00	12891,00
Investments in Associates, JVs & Unconsolidated Subsidiaries	141.664,21	140.943,11	142681,94	144442,22	146224,22	148028,21
Growth	*6%*	*1%*	*1%*	*1%*	*1%*	*1%*
Total Current Assets	202.147,21	201.426,11	203164,94	204925,22	206707,22	208511,21
Total Assets	**258.218,46**	**269.905,05**	**273534,31**	**278503,28**	**284641,72**	**292149,58**

	2013	2014	2015	2016	2017
Accounts Payable	34.688,00	25.129,00	22.977,00	20.103,00	26.577,00
Accrued Expenses	936,00	779,00	421,00	534,00	570,00
Notes Payable/Short Term Debt	4.381,00	12.866,00	156,00	0,00	333,00
Other Current liabilities, Total	20.090,00	34.985,00	29.009,00	35.702,00	24.973,00
Growth		*0,43*	*(0,21)*	*0,19*	*(0,43)*
Total Current Liabilities	58.991,00	73.759,00	35.523,00	63.563,00	76.701,00
Growth		*0,20*	*(1,08)*	*0,44*	*0,17*
Total Debt	4.381,00	12.866,00	156,00	0,00	333,00
Net Debt	(13.933,00)	12.436,00	(10.353,00)	(8.283,00)	(8.575,00)
Other Liabilities, Total	134.028,00	128.836,00	169.387,00	138.759,00	124.201,00
Growth		*(0,04)*	*0,24*	*(0,22)*	*(0,12)*
Total Liabilities	213.109,00	237.580,00	233.919,00	238.024,00	225.875,00
Common Stock	34.119,00	34.119,00	34.119,00	34.119,00	34.119,00
Additional Paid-In Capital	26.847,00	10.253,00	16.153,00	13.845,00	24.574,00
Retained Earnings (Accumulated Deficit)	(20.090,00)	(34.915,00)	(29.009,00)	(36.702,00)	(24.973,00)
Total Equity	40.876,00	9.457,00	21.263,00	11.262,00	33.720,00
Total Liabilities & Shareholders' Equity	**253.985,00**	**247.037,00**	**255.182,00**	**249.286,00**	**259.595,00**

	2018	2019		2020	2021	2022
Accounts Payable						
Accrued Expenses	570,00	570,00	570,00	570,00	570,00	570,00
Notes Payable/Short Term Debt	333,00	333,00	333,00	333,00	333,00	333,00
Other Current liabilities, Total	24.845,88	24.719,41	29.353,52	16.742,54	23.870,75	18.953,25
Growth	*0,43*	*(0,21)*	*0,19*	*(0,43)*	*0,43*	*(0,21)*
Total Current Liabilities	82.572,71	88.893,91	82.088,80	75.804,64	70.001,55	64.642,71
Growth	*0,08*	*0,08*	*(0,08)*			
Total Debt						
Net Debt						
Other Liabilities, Total	123.568,79	122.939,80	93.508,19	71.122,47	54.095,85	67.046,32
Growth	*0,24*	*0,24*	*(0,24)*	*(0,24)*	*(0,24)*	*0,24*
Total Liabilities	230.987,38	236.553,12	204.950,51	163.669,65	147.968,15	150.642,28
Common Stock	34.119,00	34.119,00	34.119,00	34.119,00	34.119,00	34.119,00
Additional Paid-In Capital	5.629,00		20.599,63	50.258,85	53.563,67	38.019,21
Retained Earnings (Accumulated Deficit)	(15.984,18)	(6.675,13)	2.962,67	12.937,94	23.259,58	33.936,71
Total Equity	23.763,82	27.443,87	57.681,31	97.315,79	110.942,26	106.074,92
Total Liabilities & Shareholders' Equity	**254.751,20**	**263.996,99**	**262631,81**	**260985,44**	**258910,41**	**256717,20**

CASH FLOW STATEMENT IN THOUSAND OF EUROS

	2013	2014	2015	2016	2017
Net Income/Starting Line	(15.666,00)	(16.420,00)	5.821,00	(1.136,00)	12.644,00
Depreciation/Depletion	(5.318,00)	(5.274,00)	(4.904,00)	(4.759,00)	(5.500,00)
Non-cash Items	6.077,00	5.312,00	4.674,00	4.690,00	4.218,00
Unusual Items	1.400,00	1.020,00	701,00	709,00	704,00
Other Non-Cash Items	4.677,00	4.292,00	3.973,00	3.981,00	3.514,00
Changes in Working Capital		(22.174,00)	7.913,00	(11.178,00)	8.667,00
Cash from Operating Activities	**(14.907,00)**	**(38.556,00)**	**13.504,00**	**(12.383,00)**	**20.029,00**
Capital Expenditures		(13.464,00)	(10.209,00)	(12.367,00)	(12.891,00)
Other Investing Cash Flow Items, Total	109.476,00	7.076,00	21.830,00	877,00	3.130,00
Cash from Investing Activities	**109.476,00**	**(6.388,00)**	**11.621,00**	**(11.490,00)**	**(9.761,00)**
Issuance (Retirement) of Debt, Net		24.471,00	(3.661,00)	4.105,00	(12.149,00)
Short Term Debt, Net		14.768,00	(38.236,00)	28.040,00	13.138,00
Long Term Debt Issued		(5.192,00)	40.551,00	(30.628,00)	(14.558,00)
Long Term Debt Reduction		14.895,00	(5.976,00)	6.693,00	(10.729,00)
Cash from Financing Activities		**24.471,00**	**(3.661,00)**	**4.105,00**	**(12.149,00)**
Net Change in Cash				**(19.768,00)**	**(1.881,00)**
Net Cash - Beginning Balance		24.324,00	14.613,00	10.827,00	8.303,00
Net Cash - Ending Balance	24.324,00	14.613,00	10.827,00	8.303,00	8.942,00
Cash Interest Paid	(9.635,00)	(15.088,00)	(10.905,00)	(10.968,00)	(10.465,00)
Cash Taxes Paid	(7.031,00)	(7.368,00)	(340,00)	(1.267,00)	2.792,00
Free Cash Flow	**(14.907,00)**	**(52.020,00)**	**3.295,00**	**(24.750,00)**	**7.138,00**

	2018	2019	2020	2021	2022	2023
Net Income/Starting Line	8.988,82	9.309,05	9.637,80	9.975,27	10.321,64	10.677,12
Depreciation/Depletion	(5.500,00)	(5.500,00)	(5.500,00)	(5.500,00)	(5.500,00)	(5.500,00)
Non-cash Items	4.218,00	4.218,00	4.218,00	4.218,00	4.218,00	4.218,00
Unusual Items	704,00	704,00	704,00	704,00	704,00	704,00
Other Non-Cash Items	3.514,00	3.514,00	3.514,00	3.514,00	3.514,00	3.514,00
Changes in Working Capital	(79,06)	12.977,47	(3.218,67)	15.341,49	(3.099,80)	10.139,07
Cash from Operating Activities	**7.627,76**	**21.004,52**	**5.137,13**	**24.034,76**	**5.939,84**	**19.534,19**
Capital Expenditures	(12.891,00)	(12.891,00)	(12.891,00)	(12.891,00)	(12.891,00)	(12.891,00)
Other Investing Cash Flow Items, Total	(724,79)	(721,10)	1.738,83	1.760,28	1.782,00	1.803,99
Cash from Investing Activities	**(13.615,79)**	**(13.612,10)**	**(11.152,17)**	**(11.130,72)**	**(11.109,00)**	**(11.087,01)**
Issuance (Retirement) of Debt, Net	5.112,38	5.565,74	(31.602,61)	(41.280,86)	(15.701,50)	2.674,13
Short Term Debt, Net	5.871,71	6.321,21	(6.805,11)	(6.284,16)	(5.803,09)	(5.358,84)
Long Term Debt Issued	(632,21)	(628,99)	(29.431,61)	(22.385,72)	(17.026,61)	12.950,47
Long Term Debt Reduction	(127,12)	(126,47)	4.634,11	(12.610,98)	7.128,20	(4.917,49)
Cash from Financing Activities	**5.112,38**	**5.565,74**	**(31.602,61)**	**(41.280,86)**	**(15.701,50)**	**2.674,13**
Net Change in Cash	**(875,66)**	**12.958,16**	**(37.617,65)**	**(28.376,82)**	**(20.870,65)**	**11.121,31**
Net Cash - Beginning Balance	8.942,00	8.533,47	21.183,14	22.798,88	25.730,72	29.961,47
Net Cash - Ending Balance	8.533,47	21.183,14	22.798,88	25.730,72	29.961,47	35.386,42
Cash Interest Paid	(10.465,00)	(10.465,00)	(10.465,00)	(10.465,00)	(10.465,00)	(10.465,00)
Cash Taxes Paid	(3.495,65)	(3.620,19)	(3.748,04)	(3.879,27)	(4.013,97)	(4.152,21)
Free Cash Flow	**(5.263,24)**	**8.113,52**	**(7.753,87)**	**11.143,76**	**(6.951,16)**	**6.643,19**

VALUATION IN THOUSAND OF EUROS

	2017	2.018	2.019	2.020	2.021	2.022	2.023	
Earnings	80.452,0	82.061,0	83.702,3	85.376,3	87.083,8	88.825,5	90.602,0	90.602,0
Costs	(72.532,0)	(77.092,6)	(78.289,0)	(79.506,5)	(80.745,3)	(82.005,9)	(83.288,7)	(83.288,7)
EBITDA	7.920,00 €	4.968,47 €	5.413,24 €	5.869,84 €	6.338,54 €	6.819,61 €	7.313,34 €	7.313,3
	10%	6%	6%	7%	7%	8%	8%	8%
Depreciation/Depletion	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)
EBIT	2.420,00 €	-531,53 €	-86,76 €	369,84 €	838,54 €	1.319,61 €	1.813,34 €	1.813,3
Taxes	(677,6)	148,8	24,3	(103,6)	(234,8)	(369,5)	(507,7)	(507,7)
	28,0000%	28,0000%	28,0000%	28,0000%	28,0000%	28,0000%	28,0000%	28,0000%
EAIDT	1.742,40 €	-382,70 €	-62,47 €	266,28 €	603,75 €	950,12 €	1.305,60 €	1.305,6
Depreciation/Depletion	5.500,0	5.500,0	5.500,0	5.500,0	5.500,0	5.500,0	5.500,0	5.500,0
FCO	7.242,40 €	5.117,30 €	5.437,53 €	5.766,28 €	6.103,75 €	6.450,12 €	6.805,60 €	6.805,6
Net Working Capital Requirement	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Capital Expenditure	(5.274,0)	(4.904,0)	(4.759,0)	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)	(5.500,0)
FCF	1.968,40 €	213,30 €	678,53 €	266,28 €	603,75 €	950,12 €	1.305,60 €	1.305,60
								21.809,36
Residual Value		1	2	3	4	5	6	
Discounted FCF		200,25 €	598,05 €	220,34 €	469,02 €	692,94 €	893,95 €	336.359,6

Valuation year	2017
Present Value Free Cash Flow	3.075 €
Present Value Residual Value	336.359,61 €
Operative Assets Value	339.434,16 €
Assets Value	339.434,16 €
Debt	- 225.875,00
Equity Value	113.559,16 €
Total Value	339.434 €

WACC CALCULATION	
Interest	8%
Cost of debt	6,067%
Taxes	28%
Company valuation	
Risk free premium	1,57%
Beta	1
Deuda / Equity	94%
Beta	1
Rm = Average market risk premium	5,37%
	0,00%
	830300,00%
Coste de los Fondos Propios	6,94%
Financial Structure	
Equity	51%
Debt	49%
WACC	6,52%
g	0,50%

Automatic CAPM	
Risk-free proxy	RSearch Metadata download
Interest rate	0,01476
Market proxy	.IBEX
Market return from	31/12/2012
Market return to	31/12/2017
Average market returı	5,37%